Read this first!

- The contents of this manual and the bundled Basic Reference are subject to change without notice.
- Note that the example screens and product illustrations shown in this User's Guide may differ somewhat from the screens and configuration of the actual camera.

LCD Panel

The liquid crystal panel of the monitor screen uses high-precision technology that provides a pixel yield in excess of 99.99%. This means that some very small number of pixels may not light or may remain lit at all times. This is due to the characteristics of the liquid crystal panel, and does not indicate malfunction.

Take a few test shots

Before shooting your final image, shoot a test shot to ensure that the camera is recording correctly.

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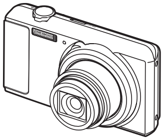
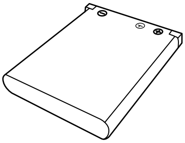
Unpacking

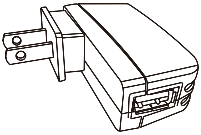
As you unpack your camera, check to make sure that all items shown below are included. If anything is missing, contact your original retailer.



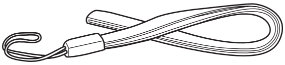
Digital camera



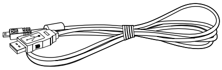
Rechargeable lithium ion battery



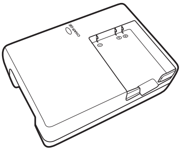
USB adapter



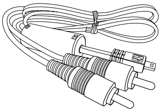
Strap



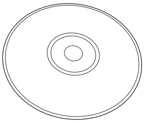
USB cable



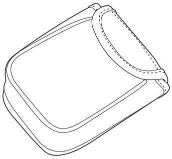
Battery charger (optional)



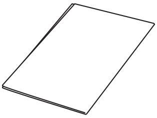
AV cable (optional)



CD-ROM



Camera pouch (optional)



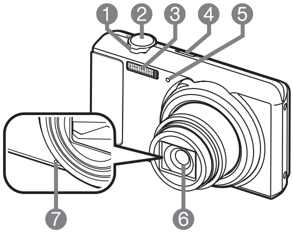
Quick Start Guide/
User Manual (optional)

General Guide

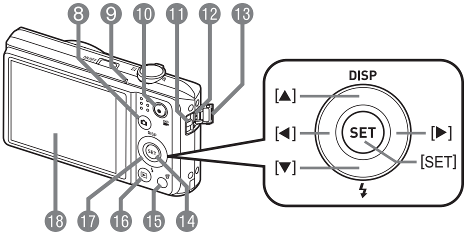
The numbers in parentheses indicate the pages where each item is explained.

- **Camera**

Front

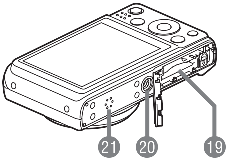


Back



1. Zoom controller (pages 24, 41, 62, 62)
2. Shutter button (page 24)
3. Flash (page 34)
4. [ON/OFF] (Power) (page 22)
5. Front lamp (page 36)
6. Lens
7. Microphone (pages 44, 71)
8. [📷] (REC) button (pages 22, 24)
9. Back lamp (pages 13, 15, 22, 34)
10. [●] (Movie) button (page 43)
11. Strap hole
12. [USB/AV] port
13. Connector cover
14. [SET] button (page 30)
15. [🗑] (Delete) button (page 27)
16. [▶] (PLAY) button (pages 22, 26)
17. Control button ([▲] [▼] [◀] [▶]) (pages 9, 27, 30, 34, 49)
18. Monitor screen (pages 7, 9)

Bottom



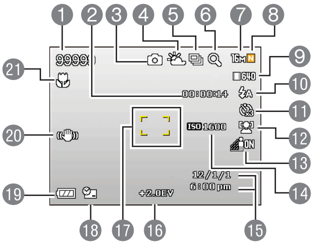
19. Battery/memory card slots (pages 12, 20, 101, 103)
20. Tripod hole
    Use this hole when attaching to a tripod.
21. Speaker

Monitor Screen Contents

The monitor screen uses various indicators, icons, and values to keep you informed of the camera's status.

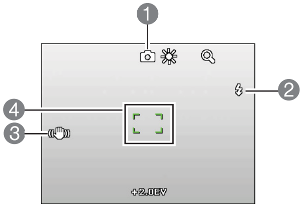
- The sample screens in this section are intended to show you the locations of all the indicators and figures that can appear on the monitor screen in various modes. They do not represent screens that actually appear on the camera.

• Snapshot Recording



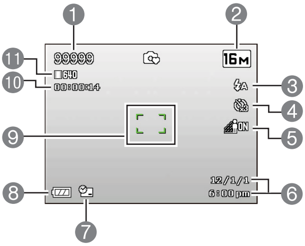
1 Remaining snapshot memory capacity
2 Remaining movie memory capacity (page 43)
3 Recording mode (page 24)
4 White balance setting (page 59)
5 Burst (page 54)
6 Image deterioration indicator (page 42)
7 Snapshot image size (page 31)
8 Snapshot image quality (page 58)
9 Movie image quality (page 33)
10 Flash (page 34)
11 Self-timer (page 36)
12 Face Tracking (page 37)
13 D-Lighting (page 60)
14 ISO sensitivity (page 60)
15 Date/time (page 89)
16 EV Compensation (page 58)
17 Focus frame (pages 25, 55)
18 Date Stamp indicator (page 89)
19 Battery level indicator (page 17)
20 Stabilizer indicator (page 54)
21 Focus Mode (page 51)

• Shutter Button Half-pressed



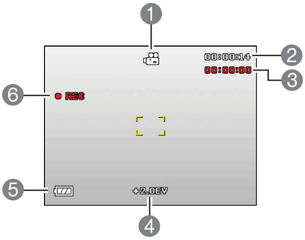
1 Recording mode (page 24)
2 Flash (page 34)
3 Stabilizer indicator (page 54)
4 Focus frame (pages 25, 55)

Simple Mode


99999
16M
640
00:00:14
ON
12/1/1
6:00 pm
1
2
3
4
5
6
7
8
9
10
11

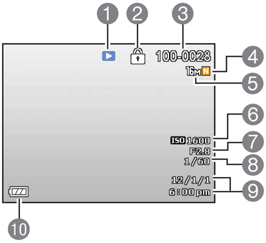
1 Remaining snapshot memory capacity
2 Snapshot image size (page 31)
3 Flash (page 34)
4 Self-timer (page 36)
5 D-Lighting (page 60)
6 Date/time (page 89)
7 Date Stamp indicator (page 89)
8 Battery level indicator (page 17)
9 Focus frame (pages 25, 55)
10 Remaining movie memory capacity (page 43)
11 Movie image quality (page 33)

Movie Recording


00:00:14
00:00:00
REC
+2.0EV
1
2
3
4
5
6

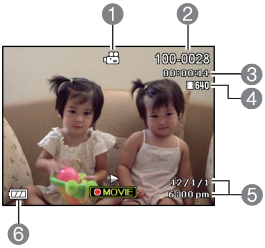
1 Recording mode (page 43)
2 Remaining movie memory capacity (page 43)
3 Movie recording time (page 43)
4 EV value (page 58)
5 Battery level indicator (page 17)
6 Movie recording indicator (page 43)

Snapshot Viewing


100-0028
16M N
ISO 1600
F2.8
1/60
12/1/1
6:00 pm
1
2
3
4
5
6
7
8
9
10

1 File type
2 Protect indicator (page 69)
3 Folder name/file name (page 85)
4 Snapshot image quality (page 58)
5 Snapshot image size (page 31)
6 ISO sensitivity (page 60)
7 Aperture value
8 Shutter speed
9 Date/time (page 89)
10 Battery level indicator (page 17)

- **Movie Playback**



1 File type
2 Folder name/file name (page 85)
3 Movie recording time (page 43)
4 Movie image quality (page 33)
5 Date/time (page 89)
6 Battery level indicator (page 17)

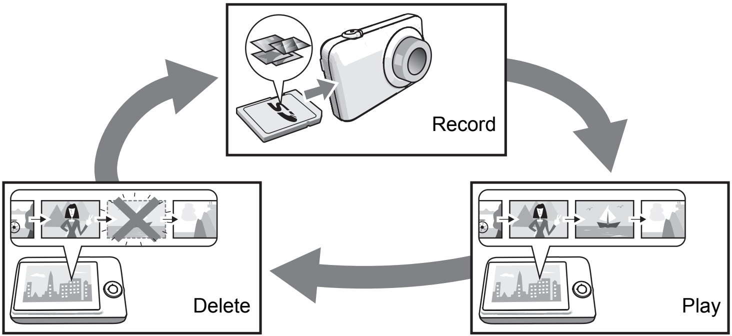
Configuring Monitor Screen Settings

You can turn display information on and off by pressing [▲] (DISP). You can configure separate settings for the REC mode and PLAY mode.

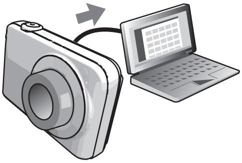
Information display on	Displays information about image settings, etc. (REC mode only).
Information display + Date/Time on	In addition to information about snapshot settings, displays movie setting information and the date/time screen. • You can specify the date format you want to use (page 90).
Information display off	No information displayed

What is a digital camera?

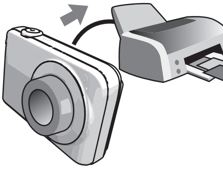
A digital camera stores images on a memory card, so you can record and delete images a countless number of times.



You can use the images you record in a variety of different ways.



Store images on your computer.

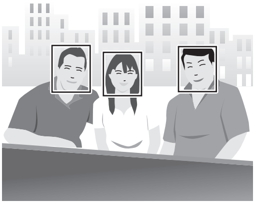


Print images.

Attach images to e-mail.

What you can do with your camera

Your camera is packed with a powerful selection of features and functions to make recording of digital images easier, including the following three main functions.



Face Tracking

Point the camera at a person and it automatically detects the person's face for beautiful portraits every time.

See page **37** for more information.

Silent

The Silent mode disables flash, mutes camera operation tones, and changes other settings to help ensure that shooting does not bother others around you.

See page **38** for more information.

Scene Mode

Simply select the sample scene you want and the camera sets up automatically. Then all you need to do is press the shutter button for perfect images.

See page **47** for more information.

First, charge the battery prior to use.

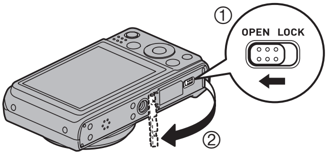
Note that the battery of a newly purchased camera is not charged. Perform the steps below to load the battery into the camera and charge it.

- Use only the provided batteries or type of battery and charger that came with your camera. Using other types of battery or charger may damage the equipment and invalidate the warranty.

To load the battery

1. Open the battery cover.

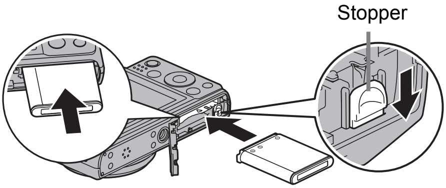
Slide the battery cover slider towards OPEN and then open it as indicated by the arrows in the illustration.



---

2. Load the battery.

Insert the battery into the compartment with the terminal facing inside the camera with correct orientation as shown. Press the battery in until the stopper secures it in place.

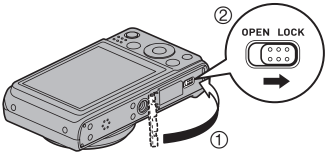


---

3. Close the battery cover.

Close the battery cover and then shift the slider towards LOCK.

- For information about how to replace the battery, see page 101.



Charge the Battery

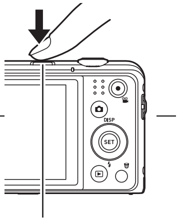
You can use either of the two following methods to charge the camera’s battery.

- USB adapter
- USB connection to a computer

• To charge with the USB adapter

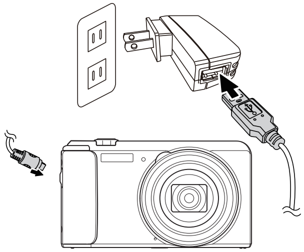
1. Turn off the camera.

Check to make sure that the camera’s monitor screen is blank. If it isn’t, press [ON/OFF] (Power) to turn off the camera.



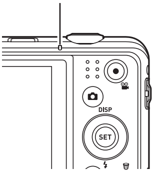
2. Connect the camera with the USB cable as shown.

3. Connect the other end with the USB adapter and plug it into a power outlet or with the USB port of PC directly for charging.



Back Lamp Operation

Lamp Status	Description
Lit Red	Charging
Flashing Red	Abnormal ambient temperature, USB adaptor problem, or battery problem (page 101)
Off	Charging complete



4. After charging is complete, disconnect the USB cable from the camera and then unplug the power cord from the power outlet.

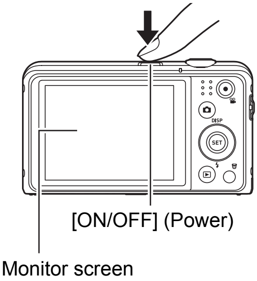
• To charge using a USB connection to a computer

The battery loaded in the camera is charged whenever the camera is connected directly to a computer with the USB cable.

- Depending on the setup of your computer, you may not be able to charge the camera’s battery over a USB connection. If this happens, use of the USB adapter that comes with the camera is recommended.

1. **Turn off the camera.**

Check to make sure that the camera’s monitor screen is blank. If it isn’t, press [ON/OFF] (Power) to turn off the camera.

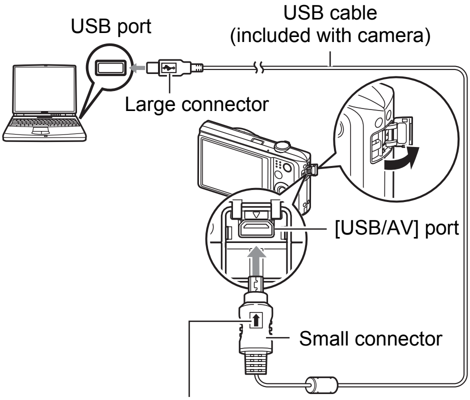


IMPORTANT!

- The first time you connect the camera to your computer with the USB cable, an error message may appear on your computer. If this happens, disconnect and then reconnect the USB cable.

2. With your computer turned on, connect the camera to it.

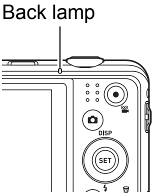
The back lamp should light red, indicating that charging has started.
The back lamp will go out when charging is complete.
It takes about 130 minutes to achieve a full charge.
Charging may take longer depending on charging conditions.


USB port
USB cable
(included with camera)
Large connector
[USB/AV] port
Small connector

Making sure that the ⬆ mark on the USB cable connector is towards the lens side, connect the cable to the camera.

Back Lamp Operation

Lamp Status	Description
Lit Red	Charging
Flashing Red	Abnormal ambient temperature, charging taking abnormally long, or battery problem (page 101)
Off	Charging complete


Back lamp
DISP
SET

3. After charging is complete, disconnect the USB cable from the camera and then from the computer.

NOTE

- Even if you turn on the camera, the battery will continue to charge if there is a USB connection with a computer. In this case, however, back lamp operation will change as described below.

Back Lamp Operation

Lamp Status	Description
Lit/Flashing Amber	Charging
Flashing Red	Abnormal ambient temperature, charging taking abnormally long, or battery problem (page 101)
Lit Green	Charging complete

IMPORTANT!

- Charging is not performed while the connected computer is in the hibernate mode.
- When charging the camera by connecting it to a computer, you may need to replug the USB cable if rebooting the computer.
- A charging error can occur immediately after charging begins or some time after charging begins. A charging error is indicated by the back lamp flashing red.

Other Charging Precautions

- Never use any other type of charger device. Attempting to use a different charger can result in unexpected accident.
- A battery that is still warm due to normal use may not charge fully. Give the battery time to cool before charging it.
- A battery discharges slightly even when it is not loaded in the camera. Because of this, it is recommended that you charge the battery immediately before you need to use it.
- Charging the camera’s battery may cause interference with TV and radio reception. If this happens, plug the charger into an outlet that is further away from the TV or radio.
- Actual charging time depends on current battery capacity and charging conditions.
- Do not use the USB adapter with any other device.

Checking Remaining Battery Power

As battery power is consumed, a battery indicator on the monitor screen indicates remaining power as shown below.

Remaining Power	High ←——————→ Low
Battery Indicator	🔋 → 🔋 → 🔋 → 🪫

🔋 indicates battery power is low. Charge the battery as soon as possible.

Recording is not possible when 🪫 is indicated. Charge the battery immediately.

- The level shown by the battery indicator may change when you switch between the REC mode and PLAY mode.
- Leaving the camera for about 30 days with no power supplied while the battery is dead will cause its date and time settings to be cleared. A message telling you to configure time and date settings will appear the next time you turn on the camera after restoring power. When this happens, configure date and time settings (page 89).

Battery Power Conservation Tips

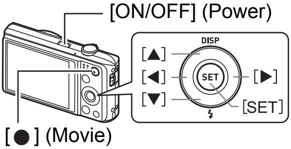
- When you do not need to use the flash, select ⊘ (Forced Off) for the flash setting (page 34).
- Enable the LCD Save and Power Saving features to protect against wasting battery power when you forget to turn off the camera (page 91).

Configuring Basic Settings the First Time You Turn On the Camera

The first time you load a battery into the camera, a screen appears for configuring the display language, date, and time settings. Failure to set the date and time correctly will cause the wrong date and time data to be recorded with images.

IMPORTANT!

- Camera models sold in certain geographic areas may not support display language selection.



1. Press [ON/OFF] (Power) to turn on the camera.

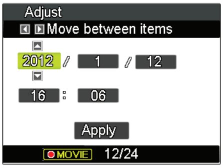
2. Use [▲], [▼], [◀], and [▶] to select the language you want and then press [SET].

3. Use [▲] and [▼] to select a date format and then press [SET].

Example: July, 10, 2012
YY/MM/DD → 12/7/10
DD/MM/YY → 10/7/12
MM/DD/YY → 7/10/12

4. Set the date and the time.

Use [◀] and [▶] to select the setting you want to change and then use [▲] and [▼] to change it.
To switch between 12-hour and 24-hour format, press [●] (Movie).



Adjust
◀ ▶ Move between items
2012 / 1 / 12
16 : 06
Apply
● MOVIE 12/24

5. After setting the date and time, use [◀] and [▶] to select “Apply” and then press [SET].

If you make a mistake configuring display language, date, or time settings with the above procedure, refer to the following pages for information about how to correct the settings.

– Display language: Page 90
– Date and time: Page 89

NOTE

- Each country controls its local time offset and the use of summer time, and so they are subject to change.
- Removing the battery from the camera too soon after configuring time and date settings for the first time can cause the settings to be reset to their factory defaults. Do not remove the battery for at least 48 hours after configuring settings.

Preparing a Memory Card

Though the camera has built-in memory that can be used to store images and movies, you probably will want to purchase a commercially available memory card for greater capacity. The camera does not come with a memory card. Images recorded while a memory card is loaded are saved to the memory card. When no memory card is loaded, images are saved to built-in memory.

Supported Memory Cards

– SD Memory Card (Up to 2GB)
– SDHC Memory Card (2GB to 32GB)
– SDXC Memory Card (32GB to 2TB)

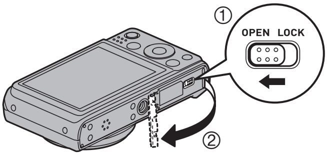
Use one of the above types of memory card.

- The above are supported memory card types as of May 2011.
- Noted memory card capacities are standard values.
- Use only SD cards that are compliant with the SD Card Association specification.

To load a memory card

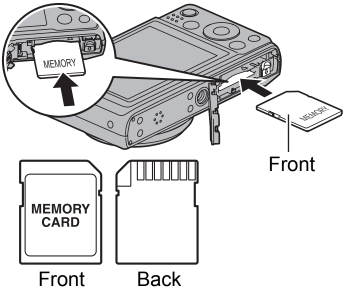
1. Press [ON/OFF] (Power) to turn off the camera and then open the battery cover.

Slide the battery cover slider towards OPEN and then open it as indicated by the arrows in the illustration.



2. Load a memory card.

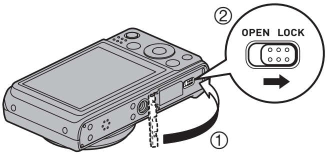
Positioning the memory card so its front is facing upwards (towards the monitor screen side of the camera), slide it into the card slot all the way in until you hear it click securely into place.



3. Close the battery cover.

Close the battery cover and then shift the slider towards LOCK.

- For information about how to replace the memory card, see page 103.



IMPORTANT!

- Never insert anything besides a supported memory card (page 19) into the memory card slot.
- Should water or any foreign object ever get into the card slot, immediately turn off the camera, remove the battery, and contact your retailer or authorized service center.

To format (initialize) a new memory card

You need to format a new memory card before using it for the first time.

1. **Press [ON/OFF] (Power) to turn on the camera and then press [SET].**

2. **Use [▲] and [▼] to select the second Control Panel option from the bottom (MENU) and then press [SET] (page 30).**

3. **Use [◀] and [▶] to select the "Set Up" tab.**

4. **Use [▲] and [▼] to select "Format" and then press [▶].**

5. **Use [▲] and [▼] to select "Format" and then press [SET].**

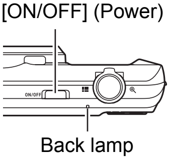
IMPORTANT!

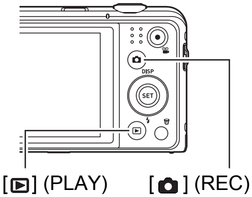
- Formatting a memory card that already has snapshots or other files on it, will delete its contents. Normally you do not need to format a memory card again. However, if storing to a card has slowed down or if you notice any other abnormality, re-format the card.
- Be sure to use the camera to format a memory card. Formatting a memory card on a computer and then using it in the camera can slow down data processing by the camera. In the case of an SD, SDHC, or SDXC memory card, formatting on a computer can result in non-conformity with the SD format, causing problems with compatibility, operation, etc.

Turning the Camera On and Off

To turn power on

To turn on power and enter the REC mode	Press [ON/OFF] (Power) or [📷] (REC). • The back lamp will light green momentarily and the lens will extend out of the camera (page 24).
To turn on power and enter the PLAY mode	Press [▶] (PLAY). • The back lamp will light green momentarily and an image currently stored in camera memory will appear on the monitor screen (page 26).





- Take care to ensure that nothing is restricting or coming into contact with the lens as it extends. Holding the lens with your hand so it cannot extend creates the risk of malfunction.
- Pressing [▶] (PLAY) while in the REC mode switches to the PLAY mode. The lens retracts about 10 seconds after switching modes.
- The LCD Save and Power Saving (pages 91) will turn off power automatically if you do not perform any operation for a preset amount of time.

To turn off the camera

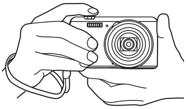
Press [ON/OFF] (Power).

- You can configure the camera so power does not turn on when you press [📷] (REC) or [▶] (PLAY). You also can configure the camera to turn off when you press [📷] (REC) or [▶] (PLAY) (page 92).

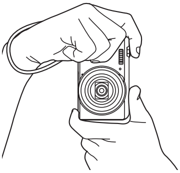
Holding the Camera Correctly

Your images will not come out clearly if you move the camera when you press the shutter button. When pressing the shutter button, be sure to hold the camera as shown in the illustration below, and keep it still by pressing your arms firmly against your sides as you shoot.
Holding the camera still, carefully press the shutter button and take care to avoid all movement as the shutter releases and for a few moments after it releases. This is especially important when available lighting is low, which slows down the shutter speed.

Horizontal



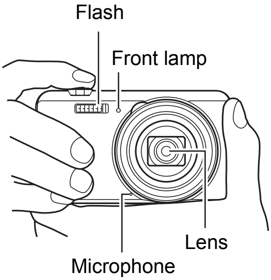
Vertical



Hold the camera so the flash is above the lens.

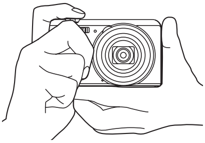
NOTE

- Take care that your fingers and the strap do not cover any of the areas indicated in the illustration.
- To protect against accidentally dropping the camera, attach the wrist strap and make sure it is around your fingers or wrist while you are operating the camera.
- Never swing the camera around by its strap.
- The supplied strap is intended for use with this camera only. Never use it for any other purpose.



IMPORTANT!

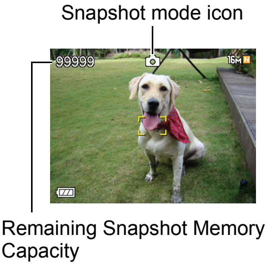
- Take care to ensure that your fingers are not blocking or are not too close to the flash. Fingers can cause unwanted shadows when using the flash.

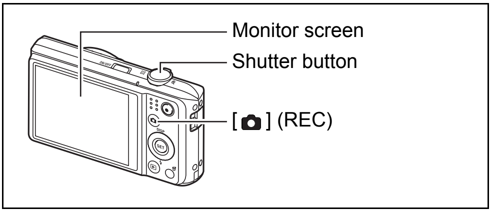


To shoot a snapshot

1. Press [📷] (REC) to turn on the camera.

The camera will enter the REC mode.
Make sure 📷 is on the display. If it isn't, see page 47.

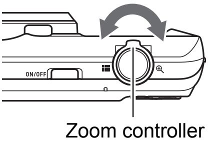

Snapshot mode icon
99999
16M N
Remaining Snapshot Memory Capacity

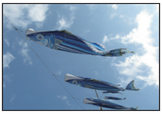

Monitor screen
Shutter button
[📷] (REC)

---

2. Point the camera at the subject.

You can zoom the image, if you want.


ON/OFF
Zoom controller

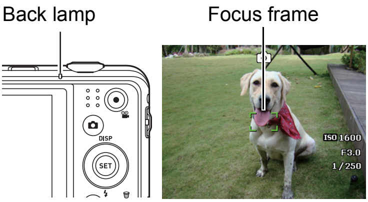


▦ Wide Angle

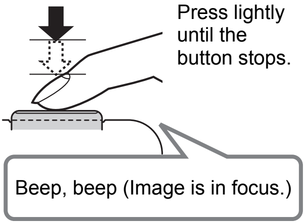
🔍 Telephoto

3. Half-press the shutter button to focus the image.

When focus is complete, the camera will beep, the back lamp will light green, and the focus frame will turn green.



Half-press


Press lightly until the button stops.
Beep, beep (Image is in focus.)

When you half-press the shutter button, the camera automatically adjusts exposure and focuses on the subject it is currently pointed at. Mastering how much pressure is required for a half-press and a full-press of the shutter button is an important technique for good-looking images.

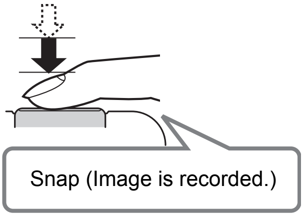
- The focus frame in the screen shots included in this manual is shown at [ ]. Note that you can change the form of the focus frame, if you want (page 53).

---

4. Continuing to keep the camera still, press the shutter button the rest of the way down.

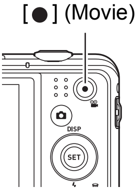
This records the snapshot.

Full-press


Snap (Image is recorded.)

Recording a Movie

Press [●] (Movie) to start movie recording. Press [●] (Movie) again to stop movie recording. See page 43 for details.



- **If the image does not focus...**

If the focus frame stays red and the back lamp is flashing green, it means that the image is not in focus (because the subject is too close, etc.). Re-point the camera at the subject and try to focus again.

- **If the subject is not in the center of the frame...**

"Focus lock" (page 52) is the name of a technique you can use when you want to shoot an image in which the subject to be focused on is not within the focus frame in the center of the screen.

- **To track the movement of a moving subject**

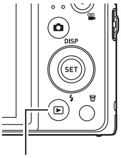
Half-press the shutter button to follow and focus automatically on a moving subject. See "[▪] Tracking" (page 55) for more information.

Viewing Snapshots

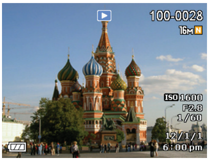
Use the following procedure to view snapshots on the camera's monitor screen.

- For information about how to play back movies, see page 61.

1. Press [▶] (PLAY) to enter the PLAY mode.



[▶] (PLAY)

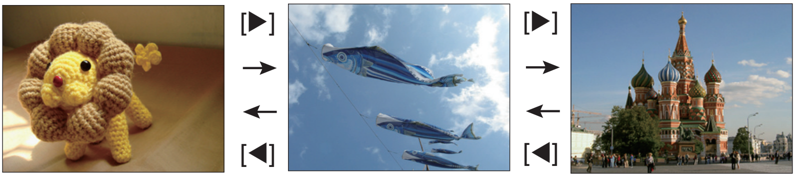


- This will display one of the snapshots currently stored in memory.
- Information about the displayed snapshot also is included (page 8).
- You also can clear the information to view only the snapshot (page 9).
- You can zoom in on the image by sliding the zoom controller towards 🔍 (page 62). If you are recording a snapshot that is very important to you, it is recommended that you zoom the image and check its details after recording it.

---

2. Use [◀] and [▶] to scroll between images.

- Holding down either button scrolls at high speed.



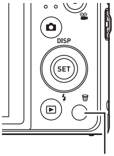
NOTE

- Half-pressing the shutter button while in the PLAY mode or while a menu screen is displayed will switch directly to the REC mode.

Deleting Snapshots and Movies

If memory becomes full, you can delete snapshots and movies you no longer need in order to free up storage and record more images.

- In either the REC mode or PLAY mode, you can delete files simply by pressing [🗑] (Delete).



[🗑] (Delete)

IMPORTANT!

- Remember that a file (image) delete operation cannot be undone.
- Deleting an audio snapshot (page 71) deletes both the snapshot and the audio file.
- You cannot delete files while movie or audio recording is in progress.
- The delete menu will not appear if you press [🗑] (Delete) while “On” is selected for the camera’s “🗑 Disable” setting (page 92). You can delete files only while “Off” is selected for “🗑 Disable”.

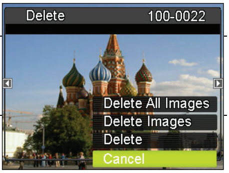
To delete a single file

1. Press [🗑] (Delete).

2. Use [◀] and [▶] to scroll through the files until the one you want to delete is displayed.

3. Use [▲] and [▼] to select “Delete” and then press [SET].

- To delete other files, repeat steps 2 and 3.
- To exit the delete operation, press [🗑] (Delete).



To delete specific files

1. **Press [🗑] (Delete).**

2. **Use [▲] and [▼] to select "Delete Files" and then press [SET].**
   - This displays a file selection screen.

3. **Use [▲], [▼], [◀], and [▶] to move the selection boundary to the file you want to delete, and then press [SET].**
   - This will select the check box of the currently selected file.

4. **Repeat step 3 to select other files, if you want. After you are finished selecting files, press [🗑] (Delete).**

5. **Use [▲] and [▼] to select "Yes" and then press [SET].**
   - This deletes the files you selected.
   - To exit the delete operation, press [🗑] (Delete).

To delete all files

1. **Press [🗑] (Delete).**

2. **Use [▲] and [▼] to select "Delete All Files" and then press [SET].**

3. **Use [▲] and [▼] to select "Yes" and then press [SET] to delete all files.**

   This will cause the message "There are no files" to appear.

Snapshot Shooting Precautions

Operation

- Never open the battery cover while the back lamp is flashing green. Doing so can result in the image you just shot being saved incorrectly, damage to other images stored in memory, malfunction of the camera, etc.
- If unwanted light is shining directly onto the lens, shade the lens with your hand when shooting an image.

Monitor Screen when Shooting Snapshots

- Subject brightness conditions can cause monitor screen response to slow and can cause digital noise in the monitor screen image.
- The image that appears on the monitor screen is for image composition. The actual image will be recorded at the quality set for the image quality setting (page 58).

Shooting Indoors under Fluorescent Lighting

- Minute flickering of fluorescent lighting can affect the brightness or color of an image.

Auto Focus Restrictions

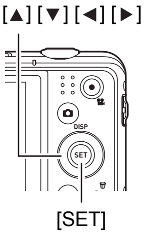
- Any of the following can make proper focus impossible.
  - Solid color wall or other very low contrast subject
  - Strongly back lit subject
  - Very shiny subject
  - Blinds or other subject with a repeating horizontal pattern
  - Multiple subjects at varying distances from the camera
  - Subject in a dark location
  - Camera movement while shooting
  - Fast-moving subject
  - Subjects outside the focus range of the camera
- If you cannot focus properly, try using focus lock (page 52) or Manual Focus (page 51).

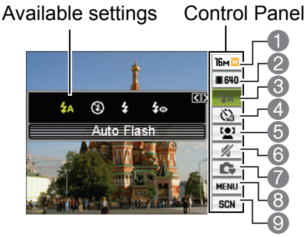
Using the Control Panel

The Control Panel can be used to configure camera settings.

1. In the REC mode, press [SET].

This will select one of the Control Panel icons and display its settings.





---

2. Use [▲] and [▼] to select the setting you want to change.

1	Snapshot image size/quality* (pages 31, 58)	6	Silent Mode (page 38)
2	Movie image quality (page 33)	7	Simple Mode (page 38)
3	Flash (page 34)	8	REC menu display (page 49)
4	Self-timer (page 36)	9	Scene Mode scene selection (page 47)
5	Face Tracking (page 37)		

* Snapshot image quality cannot be changed using the Control Panel.

---

3. Use [◀] and [▶] to change the setting.

---

4. If you want to configure another setting, repeat steps 2 and 3.

---

5. After all of the settings are the way you want, press [SET].

This will apply the settings and return to the REC mode.
If you selected “MENU”, the REC menu will appear.
If you selected “SCN”, the Scene Mode scene menu will appear.

- You can close the Control Panel by pressing 🗑 (Disable).

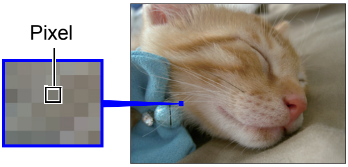
NOTE

- No icon is displayed for any Control Panel option (page 7) that is set to its initial default (reset) setting. An icon will appear only if you change the setting of the corresponding Control Panel option. The following are the initial defaults for Control Panel options.
  – Flash: Auto Flash
  – Self-timer: Off
  – Face Tracking: Off
  – Silent: Off
- You also can configure settings other than those listed above (page 49).

Changing the Image Size (Size)

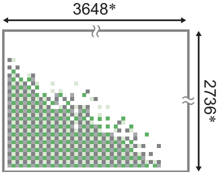
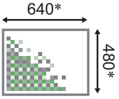
• Pixels

A digital camera image is a collection of small dots called “pixels”. The more pixels there are in an image, the more detail there will be. However, you generally can do with fewer pixels when printing an image (L size) through a print service, attaching an image to e-mail, when viewing the image on a computer, etc.



• About image sizes

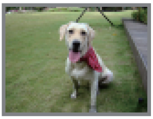
The size of an image indicates how many pixels it contains, and is expressed as horizontal pixelsxvertical pixels.

10M (3648x2736) size image = Approximately 10 million pixels	
VGA (640x480) size image = Approximately 300,000 pixels	

* Unit: pixels

Image Size Selection Tips

Note that larger images have more pixels, so they take up more memory space.

Large Number of Pixels	More detail, but takes up more memory. Best when you plan to print large-size prints (such as A3 size).	
Small Number of Pixels	Less detail, but takes up less memory. Best when you want to send images by e-mail, etc.	

- For information about movie image size, see page 33.
- For information about resizing existing snapshots, see page 70.

• To select the snapshot image size

1. In the REC mode, press [SET].

2. Use [▲] and [▼] to select the top Control Panel option (Snapshot Image Size).

3. Use [◀] and [▶] to select an image size and then press [SET].

Image Size (Pixels)	Suggested Print Size and Application	Description
16M (4608x3456)	Poster Print	Good detail for better clarity even for images cropped (page 70) from the original
3:2 (4608x3072)	Poster Print	
16:9 (4608x2592)	HDTV	
10M (3648x2736)	A3 Print	Good detail
6M (2816x2112)	A4 Print	
3M (2048x1536)	3.5"x5" Print	Best when preserving memory capacity is relatively more important than image quality.
VGA (640x480)	E Mail	Image files are smaller, which is better when attaching images to e-mail. However, images are relatively coarser.

- The initial factory default image size setting is “16M”.
- Selecting “3:2” records images with an aspect ratio of 3:2, which matches the standard aspect ratio of print paper.
- The letters “HDTV” stand for “High Definition Television”. An HDTV screen has an aspect ratio of 16:9, which makes them wider than the usual 4:3 aspect ratio of television screens of the past. Your camera can record images that are compatible with the aspect ratio an HDTV screen.
- You should regard the print paper sizes suggested here as guidelines only (200 dpi print resolution).

• Specifying Movie Image Quality

Movie image quality is a standard that determines the detail, smoothness, and clarity of a movie during playback. Shooting with the high-quality (1280) setting will result in better image quality, but it also shortens the amount of time you can shoot.

1. In the REC mode, press [SET].

---

2. Use [▲] and [▼] to select the second Control Panel option from the top (Movie Image Quality).

---

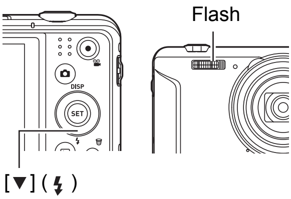
3. Use [◀] and [▶] to select the setting you want and then press [SET].

Image Quality (Pixels)		Approximate Data Rate	Frame Rate
1280	1280x720	30 Megabits/second	30 frames/second
640	640x480	6 Megabits/second	30 frames/second

- The 16:9 aspect ratio is available when “1280” is selected as the image quality.

Using Flash (Flash)

1. In the REC mode, press [▼] (⚡) once.

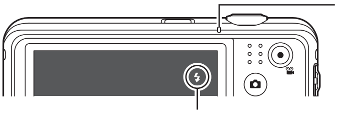


2. Use [◀] and [▶] to select the flash setting you want and then press [SET].

- If there are no indicators on the monitor screen, you can cycle through the flash modes by pressing [▼] (⚡). You can turn display information on or off by pressing [▲] (DISP) (page 9).

⚡A Auto Flash	Flash fires automatically in accordance with exposure (amount of light and brightness) conditions.
⊘ Forced Off	Flash does not fire.
⚡ Forced On	Flash always fires. This setting can be used to brighten a subject that normally comes out dark due to daylight or backlight (daylight synchro flash).
⚡◉ Red Eye Reduction	Flash fires automatically. This type of flash can be used to reduce the chance of redness in the subject’s eyes.

3. Press the shutter button to shoot.



⚡ indicates the flash will fire.

Back lamp

Flashes orange while the flash is charging to indicate that image recording is disabled.

- You will not be able to take another flash snapshot until the lamp stops flashing orange, which indicates that charging is complete.

NOTE

- Take care so your fingers and the strap do not block the flash.
- The desired effect may not be obtained when the subject is too far away or too close.
- Shooting with flash turned off when lighting is dim results in a slow shutter speed, which can cause image blur due to camera movement. Under such conditions, secure the camera with a tripod, etc.
- With red eye reduction, the flash is fired automatically in accordance with exposure. It does not fire in areas where lighting is bright.
- The presence of outdoor sunlight, fluorescent lighting, or some other light source can cause abnormal image colors.
- Select ⊘ (Forced Off) for the flash setting when shooting in areas where flash photograph is prohibited.

Red-eye Reduction

Using the flash to shoot at night or in a dimly lit room can cause red spots inside the eyes of people who are in the image. This is caused when the light from the flash reflects off of the retina of the eye. When red-eye reduction is selected as the flash mode, the camera fires a pre-flash to cause the irises in the eyes of any people in the image to close, which reduces the chance of red eye.

Note the following important points when using red-eye reduction.

- Red-eye reduction does not work unless the people in the image are looking directly at the camera (flash).
- Red-eye reduction may not work very well if the subjects are located far away from the camera.

Using the Self-timer (Self-timer)

With the Self-timer, pressing the shutter button starts a timer. The shutter is released and the image is shot after a fixed amount of time.

1. In the REC mode, press [SET].

---

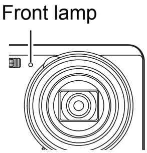
2. Use [▲] and [▼] to select the fourth Control Panel option from the top (Self-timer).

---

3. Use [◀] and [▶] to select the setting you want and then press [SET].

Self-timer: 10 sec.	Self-timer: 10 seconds
Self-timer: 2 sec.	Self-timer: 2 seconds • When shooting under conditions that slow down the shutter speed, you can use this setting to prevent image blur due to camera movement.
Self-timer: x3	Shoots three images: one image 10 seconds after the shutter button is pressed, and the next two images as soon as the camera is ready after shooting the previous image. How long it takes for the camera to get ready to shoot depends on the image size and quality settings, whether or not a memory card is loaded in the camera, and the flash charge condition.
Self-timer: Off	Turns off the Self-timer.

- The front lamp flashes while the Self-timer countdown is in progress.
- You can interrupt an ongoing Self-timer countdown by pressing [SET].



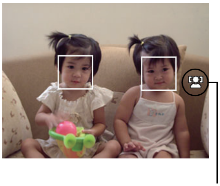
NOTE

- The Self-timer cannot be used together with the following features.
  Burst, some Scene Mode scenes
- The Triple Self-timer cannot be used together with the following features.
  Movie, Simple Mode, some Scene Mode scenes

Using Face Tracking

When shooting people, the face tracking feature detects the faces of up to eight individuals and adjusts focus and brightness accordingly.

1. **In the REC mode, press [SET].**
2. **Use [▲] and [▼] to select the fifth Control Panel option from the top (Face Tracking).**
3. **Use [◀] and [▶] to select “ Face Tracking: On” and then press [SET].**
4. **Point the camera at the subject(s).**
   The camera will detect human faces and display a frame around each one.
5. **Half-press the shutter button.**
   The camera will focus and the frames around the faces it focuses on will turn green.
6. **Press the shutter button the rest of the way down.**



IMPORTANT!

- The camera performs center focus if it cannot detect a face.
- The only focus mode available while face tracking is enabled is Auto Focus (AF).
- Face Tracking may take a bit longer when you hold the camera sideways.
- Detection of the following types of faces is not supported.
  - Face that is obstructed by hair, sunglasses, a hat, etc., or a face in dark shade
  - A profile or a face that is at an angle
  - A face that is very far away and small, or very close and large
  - A face in an area that is very dark
  - The face of a pet or some other non-human subject
- Face Tracking cannot be used in combination with any of the following features.
  - Some Scene Mode scenes
  - Simple Mode
  - Movie Recording
- The AF area setting (page 55) is ignored while face tracking is enabled.

Shooting without Disturbing Others (Silent Mode)

The Silent mode automatically disables flash, mutes operation tones, and configures other settings to avoid disturbing others around you. It comes in handy when shooting in a museum or other areas where flash photograph is prohibited.

1. In the REC mode, press [SET].

---

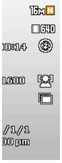
2. Use [▲] and [▼] to select the sixth Control Panel option from the top (Silent Mode).

---

3. Use [◀] and [▶] to select "On" and then press [SET].

This enters the Silent mode, which is indicated by (Silent) on the monitor screen. The following shows the camera setup in the Silent mode.

Flash	Off
Self-timer	Off
Sounds	Off



- As shown in the example to the right, Flash and Self-timer are not included in the control panel. This means that these settings cannot be changed from the Control Panel.
- See the following for details.
  - Flash (page 34)
  - Self-timer (page 36)
  - Sounds (page 86)
- Entering the Silent mode in the REC mode will also enter the Silent mode in the PLAY mode automatically (page 68).

Using the Simple Mode

The Simple mode eliminates troublesome setups and simplifies snapshot recording. This mode is recommended for those who are new to digital imaging.

1. In the REC mode, press [SET].

---

2. Use [▲] and [▼] to select the third option from the bottom in the Control Panel (Simple Mode).

---

3. Use [◀] and [▶] to select "ON" and then press [SET].

This enters the Simple mode.

4. Point the camera at the subject.

If the camera detects a human face, it continually focuses on the face (page 37). If the camera does not detect a face, it continually focuses on the center of the screen.

- The camera will focus and focus frame will turn green.

5. When you are ready to shoot, press the shutter button.

This records the snapshot.

IMPORTANT!

- Vibration and noise will occur due to lens operation. This does not indicate malfunction.

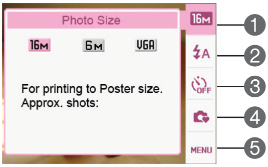
• Simple Mode Control Panel

In the Simple mode, the Control Panel provides you with access to four setting items: image size, flash, self-timer, and Simple Mode. There is also a “MENU” option, which you can select to display a menu screen for configuring image quality (page 58) and Setup tab (page 86) settings.

- In the Simple mode, the Quality tab can be used to configure the “Movie Quality” and “D-Lighting” settings only.
- The settings of menu options that appear on the normal REC menu but not on the Simple mode REC menu are automatically fixed at their optimum settings. These fixed settings do not affect normal REC menu settings.

1. In the Simple mode, press [SET].

In the Simple mode, the characters that appear on the setting screen are larger than they are in other modes.



For printing to Poster size.
Approx. shots:

2. Use [▲] and [▼] to select the setting you want to change.

1 Image size (page 31)
2 Flash (page 34)
3 Self-timer (page 36)
4 Simple Mode (page 38)
5 REC menu display (page 49)

3. Use [◀] and [▶] to change the setting.

Setting:	Available Options:
Photo Size	16M * / 6M / VGA
Flash	⚡A (Auto)* / ⚡ (On) / ⊘ (Off)
Self-timer	⏲10 (Self-timer: 10 sec.) / OFF *
Simple Mode	ON / OFF *
MENU	Quality tab/Set Up tab

- An asterisk (*) indicates reset default settings.
- The following are explanations of the Simple Mode.
  ON : Stays in Simple Mode.
  OFF : Exits Simple Mode to the normal REC mode.

4. Press [SET].

This will apply your setting(s) and display the Simple Mode viewfinder screen, indicating the camera is ready to shoot.

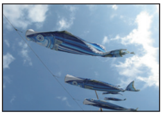
If you selected “MENU” in step 2, pressing [SET] will display the REC menu. See “Advanced Settings” (page 49) for details about configuring its settings.

- Pressing [🗑] (Delete) will exit the Control Panel.

Shooting with Zoom

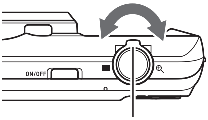
Your camera provides you with 12.5X optical zoom (that changes the lens focal distance), which can be used in combination with digital zoom (that digitally processes the center portion of the image to enlarge it) for total zoom capabilities of 12.5X to 159.5X. The image deterioration point depends on the image size (page 42).

1. **In the REC mode, slide the zoom controller to zoom.**



▦ Wide Angle

🔍 Telephoto



Zoom controller

▦ (Wide Angle) : Reduces the size of the subject and broadens the range.
🔍 (Telephoto) : Enlarges the subject and narrows the range.

2. **Press the shutter button to shoot the image.**

IMPORTANT!

- Digital zoom is disabled while date stamp (page 89) is turned on.

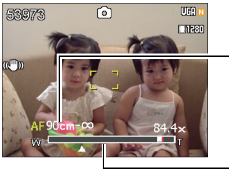
NOTE

- The higher the digital zoom factor, the coarser the recorded image. Note that the camera also has a function that lets you record using digital zoom without image deterioration (page 42).
- Use of a tripod is recommended to protect against image blur due to camera movement when shooting with telephoto.
- Performing a zoom operation changes the lens aperture.

Optical Zoom and Digital Zoom Switch Point

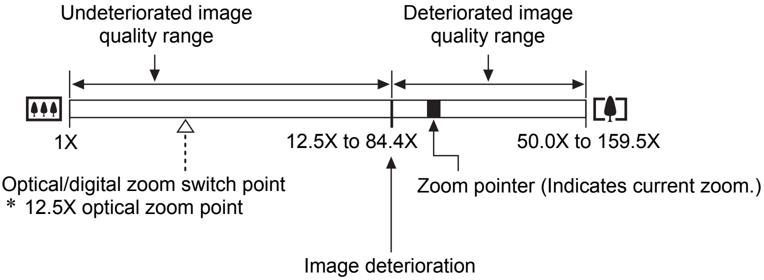
If you hold the zoom controller towards 🔍 (Telephoto), the zoom operation will stop when the optical zoom factor reaches its maximum. Momentarily releasing the zoom controller and then holding it again towards 🔍 (Telephoto) will switch to digital zoom, which you can use to set an even higher zoom factor.

- During zoom, a zoom bar on the monitor screen shows the current zoom setting.


53973
VGA N
1280
AF 90cm-∞
84.4x
W
T

Focusing range
(Displayed for Auto Focus, Macro Focus, and Manual Focus.)

Zoom bar


Undeteriorated image quality range
Deteriorated image quality range
1X
12.5X to 84.4X
50.0X to 159.5X
Optical/digital zoom switch point
＊ 12.5X optical zoom point
Zoom pointer (Indicates current zoom.)
Image deterioration

- The image deterioration point depends on the image size (page 31). The smaller the image size, the higher the zoom factor you can use before reaching the image deterioration point.
- Though digital zoom generally causes a deterioration of image quality, some digital zoom without image deterioration is possible with image sizes of "10M" and smaller. The range in which you can use digital zoom without image deterioration is indicated on the display. The deterioration point depends on the image size.

Image Size	Maximum Zoom Factor	Undeteriorated zoom limit
16M	50.0X	12.5X
3:2	50.0X	12.5X
16:9	50.0X	12.5X
10M	59.3X	14.8X
6M	76.6X	19.1X
3M	105.4X	26.4X
VGA	159.5X	84.4X

To record a movie

1. Configure the quality setting for the movie (page 33).

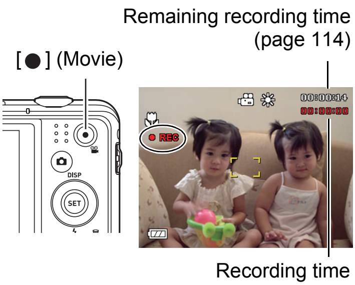
The length of the movie you can record will depend on the quality setting you select.

---

2. In the REC mode, point the camera at the subject and then press [●] (Movie).

This will start recording and display ●REC on the monitor screen.

Movie recording includes monaural audio.



---

3. Press [●] (Movie) again to stop recording.

Movie recording also will stop automatically if memory becomes full before you press [●] (Movie).

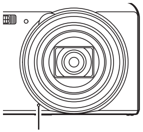
- The maximum allowed for a single movie recording is 4 GB in file size or 29 minutes in length. Movie recording stops automatically when either of these limits is reached.

Shooting with Scene Mode

With Scene Mode (page 47), you can select the sample scene that matches the type of movie you are trying to shoot and the camera will change its setup accordingly, for beautiful movies every time. Selecting the Scene Mode scene named Night Scene, for example, will configure the camera so night scenes appear clearer and brighter.

NOTE

- Spending a long time using movie recording will cause the camera to become slightly warm to the touch. This is normal and does not indicate malfunction.
- The camera also records audio. Note the following points when shooting a movie.
  - Take care that the microphone is not blocked by your fingers, etc.
  - Good recording results are not possible when the camera is too far away from what you are trying to record.
  - Operating camera buttons while shooting can cause button noise to be picked up in the audio.



- Shooting a very bright subject can cause a vertical band or a pink cast on the monitor screen image. This does not indicate malfunction.
- When using the camera’s built-in memory or certain types of memory cards, it can take too much time to record data, which can result in breaks in the image and/or audio. This condition is indicated by 🎥 and ●REC flashing on the monitor screen. To avoid loss of movie frames, use of a memory card with a maximum transfer speed of at least 10MB per second is recommended (page 103).
- The effects of camera movement in an image become more pronounced when you shoot close up or with a large zoom factor. Because of this, use of a tripod is recommended under these conditions.

Recording Audio Only (Voice REC)

Voice REC lets you record audio only, without a snapshot or movie.

1. In the REC mode, press [SET].

---

2. Use [▲] and [▼] to select the bottom Control Panel option (SCN) and then press [SET] (page 30).

---

3. Use [▲], [▼], [◀], and [▶] to select the "Voice REC" scene and then press [SET].

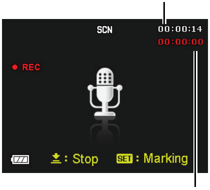
This causes 🎙 to appear on the monitor screen.

---

4. Press the shutter button to start recording.

- The back lamp flashes green while recording is in progress.
- Pressing [SET] during recording will insert a marker into the recording. During playback, you will be able to jump to the markers in the recording.

Remaining recording time



Recording time

---

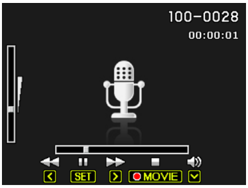
5. Press the shutter button again to stop audio recording.

- To create another audio recording file, repeat steps 4 and 5.
- To turn off Voice REC, press [SET], use [▲] and [▼] to select the bottom Control Panel option (SCN), and then select 📷 (Auto).

NOTE

- You can use [▲] (DISP) during audio recording to toggle the monitor screen on and off.
- When monitor screen contents are turned off, selecting the "Voice REC" scene will cause the monitor screen to turn off immediately (page 9).

To play back an audio recording



1. In the PLAY mode, use [◀] and [▶] to display the Voice REC file you want to play.

🎙 is displayed in place of an image for a Voice REC file.

2. Press [●] (Movie) to start playback.

- You can also start playback by selecting the second PLAY Panel item from the top (Playback Start) and pressing [SET] (page 65).

Voice REC Playback Controls

Fast forward/fast reverse	[◀] [▶]
Play/pause	[SET]
Jump to marker	While playback is paused, press [◀] or [▶] to jump to the next marker and then press [SET] to resume playback.
Volume adjustment	Press [▼] and then press [▲] [▼]
Monitor screen on/off	[▲] (DISP)
Playback end	[●] (Movie)

NOTE

- See page 27 for information about deleting a voice recording file.

Using Scene Mode

What is Scene Mode?

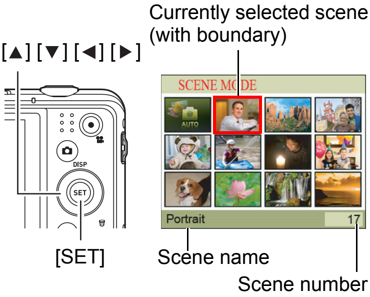
Scene Mode provides you with a collection of sample “scenes” that show a variety of different types of shooting conditions. When you need to change the setup of the camera, simply find the scene that matches what you are trying to achieve, and the camera sets up for it automatically. This helps to minimize the chance of ruined images due to poor exposure and shutter speed settings.

Some Sample Scenes

Portrait	Scenery	Night Scene	Night Scene Portrait

To shoot an image with Scene Mode

1. In the REC mode, press [SET].



2. Use [▲] and [▼] to select the bottom Control Panel option (SCN) and then press [SET] (page 30).

This will display a menu of Scene Mode scenes.

- The initial default selection is 📷 (Auto).

3. Use [▲], [▼], [◄], and [►] to move the boundary to the scene you want to select.

- The scene menu has multiple pages. Use [▲] and [▼] to scroll between menu pages.
- You can access information about the currently selected scene. See page 48 for details.
- To return to normal snapshot recording, select Scene 1 📷 (Auto).

4. Press [SET] to configure the camera with the settings for the currently selected scene.

This returns to the REC mode.

- The settings of the scene you selected remain in effect until you select a different scene.
- To select a different Scene Mode scene, repeat the above procedure from step 1.

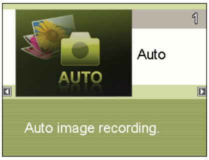
---

5. Press the shutter button (if you are shooting a snapshot) or [●] (Movie) (if you are shooting a movie).

• Using Scene Information Screen

To find out more about a scene, select it with the boundary on the scene selection screen, and then slide the zoom controller in either direction.

- To return to the scene menu, slide the zoom controller again.
- To scroll between scenes, use [◀] and [▶].
- To configure the camera with the settings for the currently selected scene, press [SET].



Auto image recording.

• Scene Mode Precautions

- Some Scene Mode scenes cannot be used while recording a movie.
- The Voice REC scene cannot be used while shooting a snapshot or recording a movie.
- Some scenes like Night Scene and Fireworks results in a slow shutter speed setting. Since a slow shutter speed increases the chance of digital noise in the image, the camera automatically performs a digital noise reduction process when either of these scenes is selected. This means that it will take a bit longer for the image to be saved which is indicated by the back lamp flashing green. Do not perform any key operation during that time. Also, it is a good idea to use a tripod to avoid image blur due to camera movement when shooting at slow shutter speeds.
- High Sensitivity
  - The high sensitivity setting is disabled whenever the camera’s flash fires.
  - High sensitivity may not produce the desired results in very dark conditions.
  - When shooting with slow shutter speeds, use a tripod to protect against blurring due to camera movement.
  - Under certain lighting conditions, the camera will perform an automatic noise filtering operation to reduce digital noise in the image. This operation causes the camera to take longer than normal to save the image and be ready for the next shot.
- Scene Mode scene images were not shot using this camera.
- Images shot using a Scene Mode scene may not produce the results you expected due to shooting conditions and other factors.
- You can modify the camera settings that are made after you select a Scene Mode scene. Note, however, that the Scene Mode settings revert to their defaults when you select another Scene Mode scene or turn off the camera.

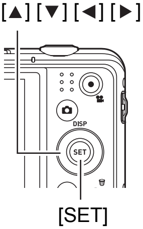
Advanced Settings

The following are menu operations you can use to configure various camera settings.

- REC mode menu contents and operations are different from those in the PLAY mode. This section explains operations using the REC menu screen. See page 65 for information about PLAY menu screen operations.

Using On-screen Menus

- **Example REC Menu Screen Operation**


[▲] [▼] [◀] [▶]
DISP
SET
[SET]

1. In the REC mode, press [SET].

2. Use [▲] and [▼] to select the second Control Panel option from the bottom (MENU) and then press [SET] (page 30).

This will display the REC menu screen.

3. Use [◀] and [▶] to select the tab where the menu item you want to configure is located.

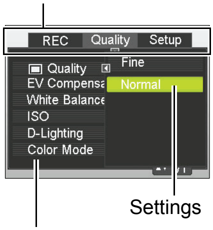
4. Use [▲] and [▼] to select the menu item you want, and then press [▶].

5. Use [▲] and [▼] to change the setting of the selected menu item.

6. After the setting is the way you want, press [SET] to apply the setting and return to the viewfinder screen.

- Pressing [◀] instead of [SET] applies the selected setting and returns to the menu item selection.
- To configure settings on another tab after pressing [◀] to return to the menu item selection, use [▲] or [🗑] (Delete) to move the highlighting up to the tabs, and then use [◀] and [▶] to select the tab you want.

Example:
When “☐ Quality” is selected on the “Quality” tab


Tabs
REC
Quality
Setup
Quality
EV Compensa
White Balance
ISO
D-Lighting
Color Mode
Fine
Normal
Settings
Selected menu item

NOTE

- [🗑] (Delete) provides a helpful way to navigate around tabs and menus.
  - Pressing [🗑] (Delete) while a tab is selected will display the viewfinder screen.
  - Pressing [🗑] (Delete) while menu item or setting is selected will “back step” in the following sequence: Settings → Menu items → Tab.

IMPORTANT!

- Some menu items are not available while the camera is in the Silent mode (page 38).

• REC Menu Operations in This Manual

REC menu operations are represented in this manual as shown below. The following operation is the same one described under “Example REC Menu Screen Operation” on page 49.

Use [▲] and [▼] to select the second Control Panel option from the bottom (MENU) and then press [SET].

Use [◀] and [▶] to select the “Quality” tab.

Procedure

[📷] (REC) → [SET] → MENU → Quality Tab → □ Quality

Press [📷] (REC).

Press [SET].

Use [▲] and [▼] to select “□ Quality” and then press [▶].

Selecting a Focus Mode (Focus)

Procedure

[📷] (REC) → [SET] → MENU → REC Tab → Focus

Settings	Type of Shot	Focus Mode		Approximate Focus Range*1	
		Snapshot	Movies	Snapshot	Movies
Auto Focus	General recording	Automatic	Automatic	Approximately 5 cm to ∞ (infinity) (2.0" to ∞) (Wide Angle)	
🌷 Macro	Close ups	Automatic		Approximately 1 cm to 50 cm (0.39" to 19.7") (Fifth step zoom from the Widest Angle setting)	
🌷S Super Macro	Close ups	Automatic		Approximately 1 cm to 30 cm (0.39" to 11.9")	
∞ Infinity	Scenery and other distant subjects	Fixed		Infinity	
MF Manual Focus	When you want to focus manually	Manual		Approximately 5 cm to ∞ (infinity)*2 (2.0" to ∞) (Wide Angle)	

*1 The focus range is the distance from the lens surface.

*2 The minimum changes along with the optical zoom setting.

Super Macro

Super Macro fixes optical zoom at a position that allows you to shoot from the closest distance to the subject. The result is closer and larger subject images.

NOTE

- Zoom is fixed while Super Macro is selected, so no zoom operation is performed when you slide the zoom controller.

To focus with manual focus

Yellow boundary

1. **On the monitor screen, compose the image so the subject you want to focus on is within the yellow boundary.**

2. **Watching the image on the monitor screen use [◀] and [▶] to adjust focus.**
   - At this time the image that is within the boundary will enlarge and fill the monitor screen, which aids in focusing. If you do not perform any operation for two seconds while the enlarged image is displayed, the screen in step 1 will re-appear.

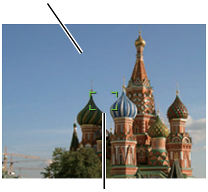
NOTE

- An Auto Macro feature detects how far the subject is from the lens and automatically selects either Macro Focus or Auto Focus accordingly.
- Auto Macro can be used when recording snapshots only.
- Auto Focus is the only focus mode available while face tracking is enabled. To select another focus mode, first turn off face tracking (page 37).
- Use of the flash together with Macro Focus can cause the light of the flash to become blocked, which may result in unwanted lens shadows in your image.
- Whenever you perform an optical zoom operation while shooting with Auto Focus, Macro Focus, or Manual Focus, a value will appear on the monitor screen to tell you the focus range, as shown below.
  Example: X cm to ∞
  * X is the actual focusing range value.
- The operations assigned to the [◀] and [▶] keys with the “L/R Key” setting (page 56) are disabled while Manual Focus is selected as the focus mode.

Using Focus Lock

“Focus lock” is a technique you can use when you want to compose an image in which the subject you want to focus on is not within the focus frame in the center of the screen.

- To use focus lock, select “[▪] Spot” for the Auto Focus area (page 55).



1. **Align the monitor screen’s focus frame with the subject you want to focus on and then half-press the shutter button.**

2. **Keeping the shutter button half-pressed (which maintains the focus setting), move the camera to compose the image.**

3. **When you are ready to shoot the image, press the shutter button the rest of the way down.**

NOTE

- Focus lock also locks exposure (AE).

Changing the Focus Frame Shape (Focus Frame)

Procedure

[📷] (REC) → [SET] → MENU → REC Tab → Focus Frame

You can use this procedure to select from among five different shapes, including a heart shape, for the focus frame.

Settings	[ ]	♡	✲	✿	♙

NOTE

- Half-pressing the shutter button will cause the focus frame to change one of the shapes shown below.

Focus successful	♡	✨	✤	♙
Focus not successful	💔	✳	✤✤✤✤✤	✖

- When shooting with face tracking or the Simple mode, the frame shape is [ ].

Using Burst

Procedure

[📷] (REC) → [SET] → MENU → REC Tab → Burst

While Burst is turned on, images are continually recorded until memory becomes full, as long as you keep the shutter button depressed.
Releasing the shutter button stops shooting.

NOTE

- With burst, exposure and focus for the first image are applied for successive images as well.
- Burst cannot be used in combination with any of the following.
  - Some Scene Mode scenes
  - Simple Mode
  - Movie Recording
- When using a burst mode, keep the camera still until all recording is finished.
- The burst rate depends on the current image size and image quality settings.
- The speed of Burst depends on the type of memory card loaded in the camera and the amount of free space available for storage. When shooting to built-in memory, burst shooting is relatively slow.
- You cannot use the self-timer in combination with Burst.

Reducing the Effects of Camera and Subject Movement (Stabilizer)

Procedure

[📷] (REC) → [SET] → MENU → REC Tab → Stabilizer

You can turn on the camera's Stabilizer feature to reduce image blur due to subject movement or camera movement when shooting a moving subject using telephoto, when shooting a fast-moving subject, or when shooting under dim lighting conditions. Your digital camera is equipped with a CCD shift type camera shake correction feature and a high-sensitivity anti image blur feature. These two features work in concert to minimize the effects of hand and subject movement.

✋ On	Minimizes the effects of hand and subject movement.
Off	Turns off Stabilizer settings
DEMO	Half-pressing the shutter button demonstrates the effect of Stabilizer. However, the image is not recorded.

NOTE

- Stabilizer is disabled during movie recording.
- ISO sensitivity, aperture, and shutter speed do not appear on the monitor screen when you half-press the shutter button while “On” is selected. These values will appear briefly, however, in the preview image that is displayed immediately after you shoot a snapshot.
- Shooting while “On” is selected can cause an image to appear somewhat coarser than normal and can cause slight deterioration of image resolution.
- Stabilizer may not be able to eliminate the effects of camera or subject movement when movement is severe.
- Stabilizer may not work properly when the camera is mounted on a tripod. Turn off Stabilizer.

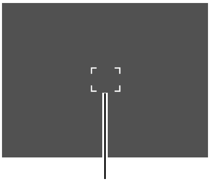
Specifying the Auto Focus Area (AF Area)

Procedure

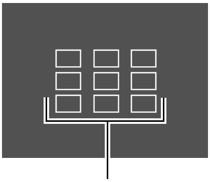
[📷] (REC) → [SET] → MENU → REC Tab → AF Area

[▪] Spot	This mode takes readings of a small area in the center of the image. This setting works well with focus lock (page 52).
[▦] Multi	When you half-press the shutter button while this setting is selected, the camera will select the optimum Auto Focus area from among nine possible areas. The focus frame of the area where the camera focuses will be displayed in green.
[↖] Tracking	Half-pressing the shutter button focuses on the subject and causes the focus frame to track the movement of the subject.

“[▪] Spot” or “[↖] Tracking”



“[▦] Multi”



IMPORTANT!

- Selecting “[↖] Tracking” can cause vibration and noise to occur due to lens operation while tracking a subject. This does not indicate malfunction.

Assigning Functions to the [◀] and [▶] Keys (L/R Key)

Procedure

[📷] (REC) → [SET] → MENU → REC Tab → L/R Key

You can assign one of the four functions listed below to the [◀] and [▶] keys.

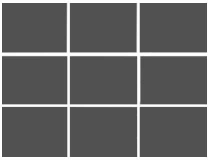
Setting	[◀]/[▶] key operation
EV Compensation	Adjusts the EV Compensation value (page 58)
White Balance	Changes the white balance setting (page 59)
ISO	Changes the ISO Sensitivity setting (page 60)
Self-timer	Sets the self-timer time (page 36)
Off	Cancels [◀] and [▶] key assignments

Displaying the On-screen Grid (Grid)

Procedure

[📷] (REC) → [SET] → MENU → REC Tab → Grid

The on-screen grid can be displayed on the REC mode monitor screen for easy vertical and horizontal alignment when composing images.



Using Icon Help (Icon Help)

Procedure

[📷] (REC) → [SET] → MENU → REC Tab → Icon Help

While Icon Help is turned on, a textual description will appear on the display for certain icons when you switch between REC functions.

Functions Supported by Icon Help

- REC Mode, Flash, Metering Mode, White Balance, Self-timer, EV Compensation

Configuring Power On Default Settings (Memory)

Procedure

[📷] (REC) → [SET] → MENU → REC Tab → Memory

When you turn off the camera, it remembers the current settings of all enabled memory items and restores them when you turn it back on. Any memory item that is disabled will be returned to its initial default setting whenever you turn off the camera.

Setting	Disabled (Initial Default Setting)	Enabled
SCN Scene Mode	Snapshot (Auto)	Setting at power off
Flash	Auto	
Focus	Auto Focus	
White Balance	Auto	
ISO	Auto	
AF Area	Spot	
Burst	Off	
Self-timer	Off	
MF Position	Position before manual focus was selected.	
Zoom Position*	Full wide	

* Optical zoom setting only.

- If you turn the camera power off and then back on while the Scene Mode memory item is enabled, all of the other memory items (except for zoom position) are initialized to the currently selected Scene Mode sample scene setup, regardless of the enabled/disabled status of the other memory items.

Image Quality Settings (Quality)

Specifying Snapshot Image Quality (Quality (Snapshot))

Procedure

[📷] (REC) → [SET] → MENU → Quality Tab → □ Quality (Snapshot)

Fine	Gives image quality priority.
Normal	Normal

- The “Fine” setting helps to bring out details when shooting a finely detailed image of nature that includes dense tree branches or leaves, or an image of a complex pattern.

Correcting Image Brightness (EV Compensation)

Procedure

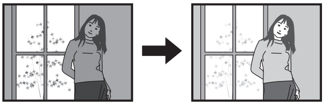
[📷] (REC) → [SET] → MENU → Quality Tab → EV Compensation

You can manually adjust an image’s exposure value (EV value) before shooting it.

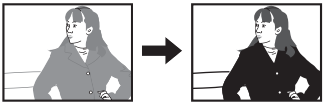
- EV Compensation Range: –2.0 EV to +2.0 EV
- Unit: 1/3 EV

1. Use [▲] and [▼] to adjust the exposure compensation value.

[▲] : Increases the EV value. A higher EV value is best for light-colored subjects and backlit subjects.



[▼] : Decreases the EV value. A lower EV value is best for dark-color subjects and for shooting outdoors on a clear day.



To cancel exposure compensation, change the EV value to 0.0.

2. Press [SET].

This applies the exposure compensation value. The exposure compensation value you set remains in effect until you change it or turn off the camera (which causes it to revert to “0.0”).

NOTE

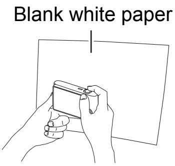
- When shooting under very dark or very bright conditions, you may not be able to obtain satisfactory results even after performing exposure compensation.

Controlling White Balance (White Balance)

Procedure

[📷] (REC) → [SET] → MENU → Quality Tab → White Balance

You can adjust white balance to match the source of light available where you are shooting and avoid the blue cast that results when shooting outdoors when it is cloudy, and the green cast that results when shooting under fluorescent lighting.

Auto	Configures the camera to adjust white balance automatically.
☀ (Daylight)	For shooting outdoors on a clear day
(Overcast)	For shooting outdoors on an overcast rainy day, in the shade, etc.
(Shade)	For shooting on a clear day in the shade of trees or buildings
(Fluorescent_1)	For shooting under white or day white fluorescent lighting
(Fluorescent_2)	For shooting under daylight fluorescent lighting
(Tungsten)	For shooting under light bulb lighting
Custom	For configuring the camera manually to suit a particular light source 1 Select “Custom”. 2 Under the lighting conditions you plan to use when shooting, point the camera at a blank white piece of paper so it fills the entire monitor screen and then press the shutter button.  3 Press [SET]. The white balance setting is retained even if you turn off the camera.

- When “Auto” is selected for the white balance setting, the camera automatically determines the white point of the subject. Certain subject colors and light source conditions can cause problems when the camera tries to determine the white point, which makes proper white balance adjustment impossible. If this happens, select the white balance setting that matches your shooting conditions (Daylight, Overcast, etc.).

Specifying ISO Sensitivity (ISO)

Procedure

[📷] (REC) → [SET] → MENU → Quality Tab → ISO

ISO sensitivity is a measure of sensitivity to light.

Auto	Adjusts sensitivity automatically according to conditions.		
ISO 64	Lower sensitivity	Slow shutter speed	Less noise
ISO 100			
ISO 200	↕	↕	↕
ISO 400			
ISO 800			
ISO 1600	Higher sensitivity	Fast shutter speed (Set for shooting in dimly lit areas.)	Some coarseness (increased digital noise)

- "Auto" ISO sensitivity always is applied for movies, regardless of the current ISO sensitivity setting.
- Higher ISO sensitivity values tend to result in digital noise in images.

Optimizing Image Brightness (D-Lighting)

Procedure

[📷] (REC) → [SET] → MENU → Quality Tab → D-Lighting

You can use this setting to optimize the balance between bright areas and dark areas when shooting images.

On	Performs brightness correction. When this option is selected, it takes longer for the image to be stored after the shutter button is pressed.
Off	Does not perform brightness correction.

Using Built-in Color Mode (Color Mode)

Procedure

[📷] (REC) → [SET] → MENU → Quality Tab → Color Mode

Settings: Off, B/W, Sepia, Red, Green, Blue, Yellow, Pink, and Purple

Viewing Snapshots and Movies

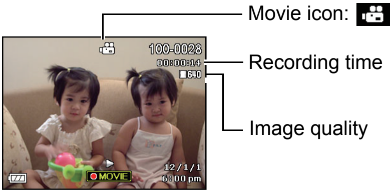
Viewing Snapshots

See page 26 for the procedure for viewing snapshots.

Viewing a Movie

1. **Press [▶] (PLAY) and then use [◀] and [▶] to display the movie you want to view.**

2. **Press [●] (Movie) to start playback.**



Movie Playback Controls

Fast forward/ fast reverse	[◀] [▶] • Each press of either button increases the speed of the fast forward or fast reverse operation. • To return to normal playback speed, press [SET].
Play/pause	[SET]
1 frame forward/ back	[◀] [▶] • Holding down either button scrolls continuously.
Volume adjustment	Press [▼] and then press [▲] [▼]. • Volume can be adjusted only while movie playback is in progress.
Information display on/off	[▲] (DISP)
Zoom	Slide the zoom controller in the direction of 🔍. • You can use [▲], [▼], [◀], and [▶] to scroll the zoomed image on the monitor screen. You can zoom a movie image up to 4.5 times normal size.
Stop playback	[●] (Movie)

- Playback may not be possible for movies not recorded with this camera.

Zooming an On-screen Image

1. **In the PLAY mode, use [◀] and [▶] to scroll through the images until the one you want is displayed.**

---

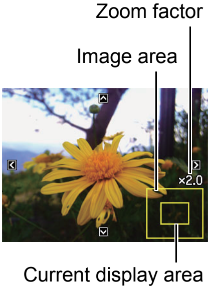
2. **Slide the zoom controller towards 🔍 to zoom.**

   You can use [▲], [▼], [◀], and [▶] to scroll the zoomed image on the monitor screen. Slide the zoom controller towards ▦ to unzoom the image.

   – When monitor screen contents are turned on, a graphic in the lower right corner of the screen shows what part of the zoomed image is currently displayed.

   – To exit the zoom screen, press [🗑] (Delete).

   – Though the maximum image zoom factor is 8X, certain image sizes may not allow zooming up to the full 8X.



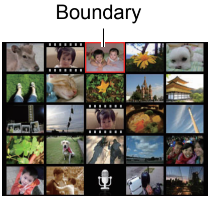
- Pressing [SET] will lock the current zoom factor for the on-screen image. You can then use [◀] and [▶] to scroll between images, using the same zoom factor. Pressing [SET] again will unlock the zoom factor and allow you to use [▲], [▼], [◀] and [▶] to move around the currently displayed images.

Displaying the Image Menu

1. **In the PLAY mode, slide the zoom controller towards ▦.**

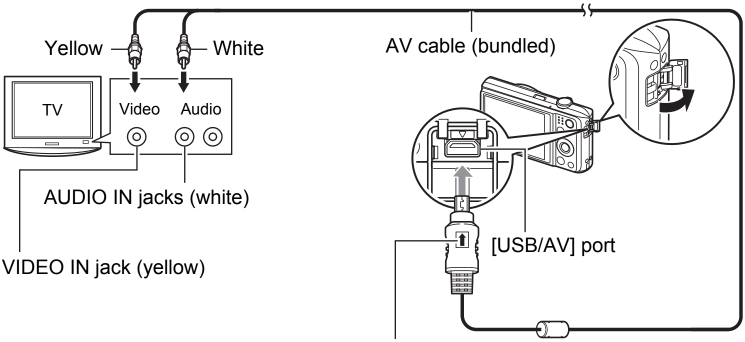
   Use [▲], [▼], [◀] and [▶] to move the selection boundary around the image menu.

   To view a particular image, use [▲], [▼], [◀], or [▶] to move the selection boundary to the image you want and then press [SET].

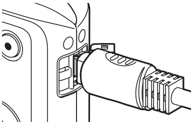


Viewing Snapshots and Movies on a TV Screen

1. Use the AV cable that comes with the camera to connect it to the TV.



Making sure that the ⬆ mark on the AV cable connector is towards the lens side, connect the cable to the camera.



- Make sure that you insert the cable connector into the USB/AV port until you feel it click securely into place. Failure to insert the connector fully can result in poor communication or malfunction.
- Note that even while the connector is fully inserted, you still will be able to see the metal part of the connector as shown in the illustration.

---

2. Turn on the TV and select its video input mode.

If the TV has more than one video input, select the one where the camera is connected.

---

3. Press [▶] (PLAY) to turn on the camera.

This will cause an image to appear on the TV screen, without anything appearing on the camera's monitor screen.

- Pressing [ON/OFF] (Power) or [📷] (REC) will not turn on the camera while the AV cable is connected.
- You also can change the aspect ratio of the screen and the video output system (page 93).

---

4. Now you can display images and play back movies as you normally do.

IMPORTANT!

- Before connecting to a TV to display images, be sure to configure the camera’s [📷] (REC) and [▶] (PLAY) buttons for “Power On” or “Power On/Off” (page 91).
- Audio is initially output by the camera at maximum volume. When you first start displaying images, set the TV volume control at a relatively low level and then adjust it as required.

NOTE

- Audio is monaural.
- Certain TVs may cut off part of the images.
- All icons and indicators that appear on the monitor screen also appear on the TV screen. You can use [▲] (DISP) to change the display contents.

Recording Camera Images to a DVD Recorder or Video Deck

Use one of the following methods to connect the camera to the recording device using the camera’s bundled AV cable.

  – DVD recorder or video deck: Connect to the VIDEO IN and AUDIO IN terminals.
  – Camera: USB/AV port

You can play a slideshow of snapshots and movies on the camera and record it on a DVD or video tape. When recording images to an external device, use [▲] (DISP) to clear all indicators from the monitor screen (page 9).

For information about connecting a monitor to the recording device and about how to record, see the user documentation that comes with the recording device you are using.

Other Playback Functions (PLAY)

This section explains menu items that you can use to configure settings and perform other playback operations.

Using the PLAY Panel

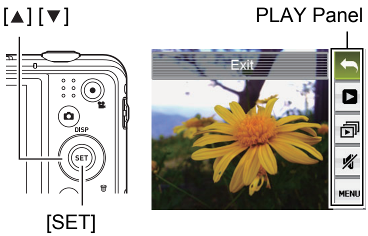
Pressing [SET] in the PLAY mode will display the PLAY Panel.

- **Example PLAY Panel Operation**

1. In the PLAY mode, press [SET].

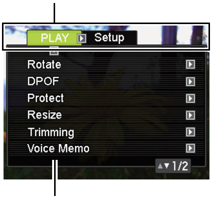
The PLAY Panel will appear along the right side of the monitor screen.

2. Use [▲] and [▼] to select the PLAY Panel item you want, and then press [SET].



3. The following describes the operations you can perform for each of the PLAY Panel items.

Exit	Exits the PLAY Panel.
Playback Start	The operation that is performed when this item is selected depends on the type of file that is currently displayed on the monitor screen. • Movie: Starts movie playback (page 61). • Voice REC: Starts voice recording playback (page 46). • Audio snapshot: Starts audio playback (page 71).
Slideshow	Displays a slideshow menu. See “Playing a Slideshow on the Camera (Slideshow)” (page 67) for slideshow menu operations.
Silent Mode	The Silent mode turns off camera operation sounds so you can avoid disturbing others around you when playing back images.

MENU Menu	Displays the PLAY menu. You can perform the following operations on the PLAY menu. 1 Use [◀] and [▶] to select the tab where the menu item you want to configure is located. 2 Use [▲] and [▼] to select the menu item you want, and then press [▶]. 3 Use [▲] and [▼] to change the setting of the selected menu item. 4 Press [SET] to apply the setting.  Tabs PLAY Setup Rotate DPOF Protect Resize Trimming Voice Memo ▲▼1/2 Selected menu item **NOTE** • Pressing [🗑] (Delete) performs one of the following operations. – If you previously selected a tab, pressing [🗑] (Delete) returns to the viewfinder screen. – If you previously selected menu item, pressing [🗑] (Delete) returns to the tab.

• PLAY Menu Operations in This Manual

PLAY menu operations are represented in this manual as shown below. The following operation is the same one described under “Example PLAY Panel Operation” on page 65.

Use [▲] and [▼] to select the bottom PLAY Panel item (MENU) and then press [SET].

Procedure

[▶] (PLAY) → [SET] → MENU → PLAY Tab → Protect

Press [▶] (PLAY).

Press [SET].

Use [◀] and [▶] to select the “PLAY” tab.

Use [▲] and [▼] to select “Protect” and then press [▶].

Playing a Slideshow on the Camera (Slideshow)

1. In the PLAY mode, press [SET].

---

2. Use [▲] and [▼] to select the third PLAY Panel item from the bottom (Slideshow) and then press [SET] (page 65).

Start	Starts the slideshow.
Time	Time from the start to the end of the slideshow 1 to 5 minutes, 10 minutes, 15 minutes, 30 minutes, 60 minutes
Interval	Amount of time each image remains displayed Use [◀] and [▶] to select a value from 1 to 30 seconds, or “MAX”. If you specify a value from 1 to 30 seconds, images change at the specified interval, but the audio portion of movies and audio snapshots will continue to play until the end. When the slideshow reaches a movie file while “MAX” is selected, only the first frame of the movie will displayed. Voice REC files are not played back when “MAX” is selected.
Effect	Turns effect on or off. On: Turns on the image change effect and background music. Off: No image change effect or background music

- To stop the slideshow, press [🗑] (Delete). Pressing [SET] instead of [🗑] (Delete) stops the slideshow and returns to the menu screen.
- Adjust audio volume by pressing [▼] and then press [▲] or [▼] during playback.
- All button operations are disabled while the slideshow is transitioning from one image to another.
- The time required for transition from one image to another may be longer in the case of an image that was not recorded with this camera.

Performing Playback without Disturbing Others (Silent Mode)

The Silent mode turns off camera operation sounds so you can avoid disturbing others around you when play back images.

1. **In the PLAY mode, press [SET].**

2. **On the PLAY panel (page 65), use [▲] and [▼] to select the second menu option from the bottom (Silent) and then press [SET].**

3. **Use [▲] and [▼] to select “On” and then press [SET].**
   This enters the Silent mode, which is indicated by m on the monitor screen. The “Sounds” setting (page 86) automatically changes to “Off” in the Silent mode.

Rotating an Image (Rotate)

Procedure

[▶] (PLAY) → Snapshot Screen → [SET] → MENU → PLAY Tab → Rotate

1. **Use [▲] and [▼] to select “Rotate” and then press [SET].**
   Each press of [SET] will rotate the displayed image 90 degrees left.

2. **When the displayed image is at the orientation you want, press [🗑] (Delete).**

NOTE

- Note that this procedure does not actually change the image data. It simply alters how the image is displayed on the camera’s monitor screen.
- An image that has been protected or zoomed cannot be rotated.
- The original (unrotated) version of the image will be displayed on the image menu screen.

Selecting Images for Printing (DPOF)

Procedure

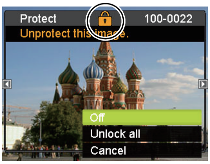
[▶] (PLAY) → Snapshot Screen → [SET] → MENU → PLAY Tab → DPOF

See page 76 for details.

Protecting a File Against Deletion (Protect)

Procedure

[▶] (PLAY) → [SET] → MENU → PLAY Tab → Protect

On	Protects specific files. 1 Use [◀] and [▶] to scroll through the files until the one you want to protect is displayed. 2 Use [▲] and [▼] to select "On" and then press [SET]. An image that is protected is indicated by the 🔒 icon. 3 To protect other files, repeat steps 1 and 2. To exit the protect operation, press [🗑] (Delete). To unprotect a file, select "Off" instead of "On" in step 2 above.  Protect 100-0022 Unprotect this image. Off Unlock all Cancel
All Files: On	Protects all files. 1 Use [▲] and [▼] to select "All Files: On" and then press [SET]. 2 Press [🗑] (Delete). To unprotect all files, select "All Files: Off" instead of "All Files: On" in step 1 above.

IMPORTANT!

- Note that even if a file is protected, it will be deleted if you perform the format operation (page 94).

Resizing a Snapshot (Resize)

Procedure

[▶] (PLAY) → Snapshot Screen → [SET] → MENU → PLAY Tab → Resize

You can reduce the size of a snapshot and save the result as a separate snapshot. The original snapshot is also retained. You can select resize an image to one of three image sizes: 10M, 6M, VGA.

- Resizing a 3:2 or 16:9 size snapshot will create an image with an aspect ratio of 4:3, with both sides cut off.
- The recording date of the resized version of the snapshot will be the same as the recording date of the original snapshot.

Cropping a Snapshot (Trimming)

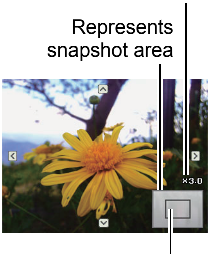
Procedure

[▶] (PLAY) → Snapshot Screen → [SET] → MENU → PLAY Tab → Trimming

You can crop a snapshot to trim parts you do not need, and save the result in a separate file. The original snapshot is also retained.

Use the zoom controller to zoom the image to the size you want, use [▲], [▼], [◀], and [▶] to display the portion of the image you want to cut out, and then press [SET].

- The image produced by cropping a 3:2 or 16:9 image will have an aspect ratio of 4:3.
- The recording date of the cropped image will be the same as the recording date of the original snapshot.

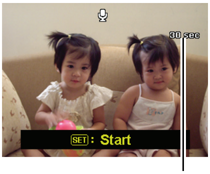


Adding Audio to a Snapshot (Voice Memo)

Procedure

[▶] (PLAY) → Snapshot Screen → [SET] → MENU → PLAY Tab → Voice Memo

You can add audio to a snapshot after you shoot it. You can re-record a snapshot's audio whenever you want. You can record up to about 30 seconds of audio for a single snapshot.



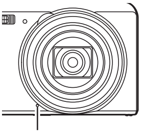
Remaining recording time

1. **Press [SET] to start audio recording.**

---

2. **Press [SET] again to stop audio recording.**

- Take care that you do not block the camera's microphone with your fingers while recording.
- Good recording results are not possible when the camera is too far away from what you are trying to record.
- Your camera supports the following audio data formats.
  - – Audio Format: WAV extension
- You cannot add audio to an image that is protected.
- To delete audio, perform the following operation:
  Voice Memo → Delete → [SET] → [🗑] (Delete).


Microphone

IMPORTANT!

- Note that you cannot restore the original audio of an Audio Snapshot after you delete or re-record it.

To play snapshot audio

1. **In the PLAY mode, use [◀] and [▶] to scroll through the images until the Audio Snapshot you want is displayed.**

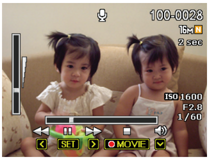
An audio snapshot is one that has a 🎙 icon.

---

2. **Press [●] (Movie) to start playback.**

Voice Recording Playback Controls

Fast forward/fast reverse	[◀] [▶]
Play/pause	[SET]
Volume adjustment	Press [▼] and then press [▲] [▼].
Display content switching	[▲] (DISP)
Stop playback	[●] (Movie)



Copying Files (Copy)

Procedure

[▶] (PLAY) → Snapshot Screen → [SET] → MENU → PLAY Tab → Copy

Files can be copied from the camera's built-in memory to a memory card or from a memory card to built-in memory.

Copy to Card	Copies all files from built-in camera memory to a memory card. This option copies all the files in built-in camera memory. It cannot be used to copy a single file.
Copy to Camera	Copies a single file on the memory card to built-in camera memory. Files are copied to the folder in built-in memory whose name has the largest serial number. 1 Use [◀] and [▶] to select the file you want to copy. 2 Use [▲] and [▼] to select "Copy" and then press [SET].

NOTE

- You can copy snapshots, movies, audio snapshots, or Voice REC files you recorded with this camera.

Printing

Printing Snapshots

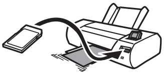
Professional Print Service

You can take a memory card that contains the images you want to print to a professional print service and have them printed.

Printing on a Home Printer

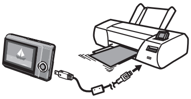
Printing Images on a Printer with Memory Card Slot

You can use a printer equipped with a memory card slot to print images directly from a memory card. For details, see the user documentation that comes with your printer.



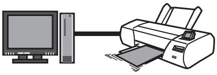
Connecting Directly to a PictBridge Compatible Printer

You can print on a printer that supports PictBridge (page 74).



Printing with a Computer

After transferring the images to your computer, use commercially available software to print.



- You can specify which images you want to print, the number of copies, and date stamp settings before printing (page 76).

Connecting Directly to a PictBridge Compatible Printer

You can connect the camera directly to a printer that supports PictBridge and print images without going through a computer.

• To set up the camera before connecting to a printer

1. **Turn on the camera. Next, press [SET] and then display the REC menu (page 49) or the PLAY menu (page 65).**

---

2. **On the “Set Up” tab, select “USB” and then press [▶].**

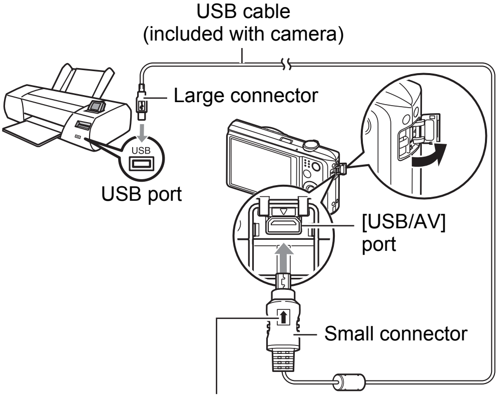
---

3. **Use [▲] and [▼] to select “PTP (PictBridge)”, and then press [SET].**

• Connecting the Camera to a Printer

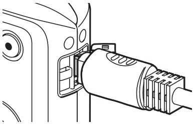
Use the USB cable that comes bundled with the camera to connect the camera to your printer’s USB port.

- Make sure that you insert the cable connector into the USB/AV port until you feel it click securely into place. Failure to insert the connector fully can result in poor communication or malfunction.



Making sure that the ⬆ mark on the USB cable connector is towards the lens side, connect the cable to the camera.

- Note that even while the connector is fully inserted, you still will be able to see the metal part of the connector as shown in the illustration.
- When connecting the USB cable to a USB port, make sure you align the connector correctly with the port.



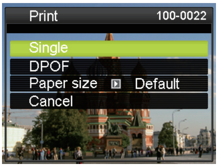
- **To print**

1. Turn on the printer and load paper.

---

2. Turn on the camera.

This will display the print menu screen.


Print 100-0022
Single
DPOF
Paper size ▶ Default
Cancel

3. Use [▲] and [▼] to select "Paper Size", and then press [▶].

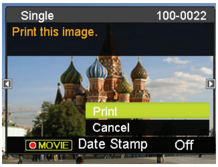
4. Use [▲] and [▼] to select a paper size and then press [SET].

- The following are the available paper sizes.
  3.5"x5", 5"x7", 4"x6", A4, 8.5"x11", By Printer
- Selecting "By Printer" prints using a paper size selected on the printer.
- See the documentation that comes with your printer for information about paper settings.

5. Use [▲] and [▼] to specify the print option you want.

Single	: Prints one image. Select and then press [SET]. Next, use [◀] and [▶] to select the image you want to print.
DPOF	: Prints multiple images. Select and then press [SET]. With this option, images will be printed in accordance with DPOF settings (page 76).

- To toggle date stamp on and off, press [●] (Movie). The date stamp will be printed when "On" is indicated on the monitor screen.


Single 100-0022
Print this image.
Print
Cancel
● MOVIE Date Stamp Off

6. Use [▲] and [▼] to select "Print" and then press [SET].

Printing will start and the message "Busy... Please wait..." will appear on the monitor screen. The message will disappear after a short while, even though printing is still being performed. Pressing any camera button will cause the printing status to re-appear. The print menu screen will re-appear when printing is complete.

- If you selected "Single", you can repeat the procedure from step 5, if you want.

7. After printing is complete, turn off the camera and disconnect the USB cable from the printer and camera.

Using DPOF to Specify Images to be Printed and the Number of Copies

• Digital Print Order Format (DPOF)

DPOF is a standard that allows you to include image type, number of copy, and time stamp on/off information on the memory card with the images. After configuring settings, you can use the memory card to print on a home printer that supports DPOF or take the memory card to a professional print service.

- Whether or not you will be able to use DPOF settings for printing depends on the printer you are using.
- Some professional print services may not support DPOF.

• Configuring DPOF Settings Individually for Each Image

Procedure

[▶] (PLAY) → Snapshot Screen → [SET] → MENU → PLAY Tab → DPOF → Select images

1. Use [◀] and [▶] to scroll through the files until the image you want to print is displayed.

2. Use [▲] and [▼] to specify the number of copies.

You can specify a value up to 99. Specify 00 if you do not want to print the image.

- If you want to include the date in the images, press [●] (Movie) so "On" is shown for date stamp.
- Repeat steps 1 and 2 to configure settings for other images, if you want.

3. Press [SET].

• Configuring the Same DPOF Settings for All the Images

Procedure

[▶] (PLAY) → Snapshot Screen → [SET] → MENU → PLAY Tab → DPOF → All images

1. Use [▲] and [▼] to specify the number of copies.

You can specify a value up to 99. Specify 00 if you do not want to print the image.

- If you want to include the date in the images, press [●] (Movie) so "On" is shown for date stamp.

2. Press [SET].

DPOF settings are not cleared automatically after printing is complete.

The next DPOF print operation you execute will be performed using the last DPOF settings you configured for the images. To clear DPOF settings, specify "00" for the number of copies of all images.

Tell your print service about your DPOF settings!

If you take a memory card to a professional print service, be sure to tell them that it includes DPOF settings for the images to be printed and the number of copies. If you don’t, the print service may print all the images without regard to your DPOF settings, or they may ignore your date stamp setting.

• Date Stamp

You can use one of the following three methods to include the recording date in the printout of an image.

Configuring camera settings	Configure DPOF settings (page 76). You can turn date stamp on and off each time you print. You can configure settings so some images include the date stamp and some don’t.
	Configure the Camera’s Time Stamp setting (page 89). • The camera’s Time Stamp setting imprints the date into a snapshot when you shoot it, so the date is always included when you print. It cannot be deleted. • Do not turn on DPOF date stamp for an image that includes a date stamped with the camera’s Time Stamp function. Doing so can cause the two stamps to be overprinted.
Configuring computer settings	You can use commercially available image management software to date stamp images.
Professional print service	Request date stamp when ordering prints from a professional print service.

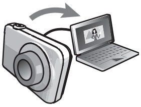
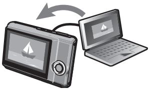
• Standards Supported by the Camera

- PictBridge
  This is a standard of the Camera and Imaging Products Association (CIPA).
- Exif Print
  Printing on a printer that supports Exif Print uses information about shooting conditions recorded with the image to enhance printed image quality. Contact your printer manufacturer for information about models that support Exif Print, printer upgrades, etc.

Using the Camera with a Computer

Things you can do using a computer...

You can perform the operations described below while the camera is connected to a computer.

Save images to a computer and view them there 	Save images and view them manually (USB connection) (pages 79).
Transfer images stored on your computer to camera memory 	In addition to images, you also can transfer screen shot images from your computer to the camera (Photo Transport*).
Play back and edit movies	• You can play back movies (pages 81, 84). • To edit movies, use commercially available software as required.

* Windows only

The procedures you need to perform when using the camera with your computer and when using the bundled software are different for Windows and the Macintosh.

• Computer System Requirements for Bundled Software

Computer system requirements are different for each of the applications. See the “Read me” file that comes with each application for details.

• Precautions for Windows Users

- The bundled software requires Administrator privileges to run.
- Operation on a self-made computer is not supported.
- Operation may not be possible under certain computer environments.

Viewing and Storing Images on a Computer

You can connect the camera to your computer in order to view and store images (snapshot and movie files).

NOTE

- You also can use your computer's card slot (if it has one) or a commercially available card reader to access image files directly from the camera's memory card. For details, see the user documentation that comes with your computer.

• To connect the camera to your computer and save files

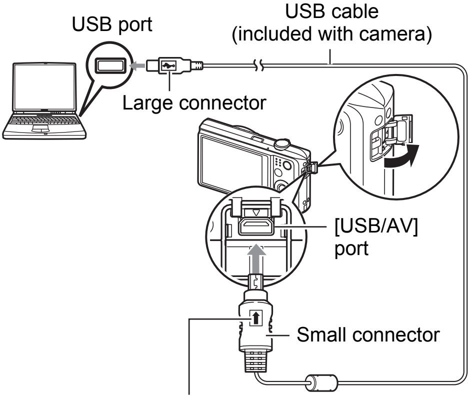
1. Turn on the camera. Next, press [SET] and then display the REC menu (page 49) or the PLAY menu (page 65).

2. On the "Set Up" tab, select "USB" and then press [▶].

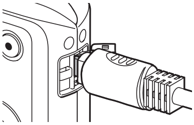
3. Use [▲] and [▼] to select "Mass Storage", and then press [SET].

4. Turn off the camera and then use the USB cable that comes with the camera to connect it to your computer.

- Connecting the camera to a computer with a USB cable starts charging of the camera's battery (page 14).
- Make sure that you insert the cable connector into the USB/AV port until you feel it click securely into place. Failure to insert the connector fully can result in poor communication or malfunction.



Making sure that the ⬆ mark on the USB cable connector is towards the lens side, connect the cable to the camera.



- Note that even while the connector is fully inserted, you still will be able to see the metal part of the connector as shown in the illustration.
- When connecting the USB cable to a USB port, make sure you align the connector correctly with the port.
- Your computer may not be able to recognize the camera if you connect via a USB hub. Always connect directly to the computer's USB port.

5. Turn on the camera.

- The first time you connect the camera to your computer with the USB cable, an error message may appear on your computer. If this happens, disconnect and then reconnect the USB cable.
- Charging continues even if the camera is turned on (page 16).

6. Windows 7, Windows Vista users: Click "Start" and then "Computer". Windows XP users: Click "Start" and then "My Computer".

7. Double-click "Removable Disk".

- Your computer recognizes the memory card loaded in the camera (or built-in memory if there is no card) as a removable disk.

8. Right-click the "DCIM" folder.

9. On the shortcut menu that appears, click "Copy".

10. Windows 7, Windows Vista users: Click "Start" and then "Documents". Windows XP users: Click "Start" and then "My Documents".

- If you already have a "DCIM" folder in "Documents" (Windows 7, Windows Vista) or "My Documents" (Windows XP), the next step will overwrite it. If you want to keep the existing "DCIM" folder, you need to change its name or move it to a different location before performing the next step.

11. Windows 7 users: On the "Documents" "Organize" menu, select "Paste".
Windows Vista users: On the "Documents" "Edit" menu, select "Paste".
Windows XP users: On the "My Documents" "Edit" menu, select "Paste".

This will paste the "DCIM" folder (and all the image files it contains) into your "Documents" (Windows 7, Windows Vista) or "My Documents" (Windows XP) folder. You now have a copy of the files that are in camera memory on your computer.

12. After you finish copying images, disconnect the camera from the computer.

On the camera, press [ON/OFF] (Power) to turn off the camera. After making sure that the back lamp is unlit, disconnect the camera from the computer.

• To view images you copied to your computer

1. **Double-click the copied “DCIM” folder to open it.**

2. **Double-click the folder that contains the images you want to view.**

3. **Double-click the image file you want to view.**
   An image that was rotated on the camera will be displayed on your computer screen in its original (unrotated) orientation.

> **Never use your computer to modify, delete, move, or rename any image files that are in the camera’s built-in memory or on its memory card.**
> Doing so can cause problems with the camera’s image management data, which will make it impossible to play back images on the camera and can drastically alter remaining memory capacity. Whenever you want to modify, delete, move, or rename an image, do so only on images that are stored on your computer.

IMPORTANT!

- Never unplug the USB cable, or operate the camera while viewing or storing images. Doing so can cause data to become corrupted.

Playing Movies

Windows Media Player, which is already installed on most computers, can be used for movie playback. To play back a movie, first copy the movie to your computer and then double-click the movie file.

• Minimum Computer System Requirements for Movie Playback

The minimum system requirements described below are necessary to play back movies recorded with this camera on a computer.

Operating System : Windows 7, Windows Vista, Windows XP (SP3)
CPU : Image Quality “1280”:
    Pentium 4 3.2 GHz or higher
  Image Quality “640”:
    Pentium M 1.0 GHz or higher
    Pentium 4 2.0 GHz or higher
Required Software: Windows Media Player, DirectX 9.0c or higher

- The above are recommended system environments. Configuring one of these environments does not guarantee proper operation.
- Certain settings and other installed software may interfere with proper playback of movies.

- **Movie Playback Precautions**

- Be sure to move the movie data to the hard disk of your computer before trying to play it. Proper movie playback may not be possible for data accessed over a network, from a memory card, etc.
- Proper movie playback may not be possible on some computers. If you experience problems, try the following.
  - Try recording movies with a quality setting of “640”.
  - Try upgrading Windows Media Player to the latest version.
  - Quit any other applications you have running, and stop resident applications.

Even if proper playback is not possible on the computer, you can use the AV cable that comes bundled with the camera to connect to the video input terminal of a TV or computer and play back movies that way.

- **To connect the camera to your computer and save files**

1. Turn on the camera. Next, press [SET] and then display the REC menu (page 49) or the PLAY menu (page 65).

---

2. On the “Set Up” tab, select “USB” and then press [▶].

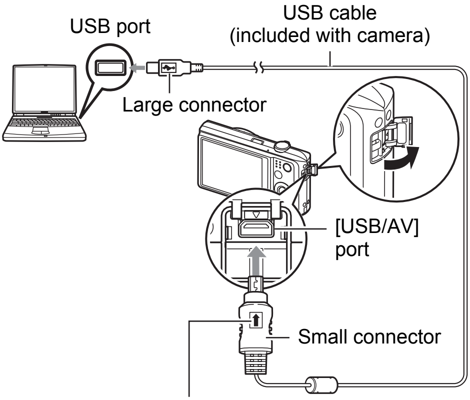
---

3. Use [▲] and [▼] to select “Mass Storage”, and then press [SET].

---

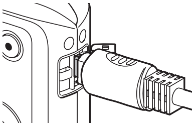
4. Turn off the camera and then use the USB cable that comes with the camera to connect it to your Macintosh.

- Connecting the camera to a computer with a USB cable starts charging of the camera’s battery (page 14).
- Make sure that you insert the cable connector into the USB/AV port until you feel it click securely into place. Failure to insert the connector fully can result in poor communication or malfunction.



Making sure that the ⬆ mark on the USB cable connector is towards the lens side, connect the cable to the camera.

- Note that even while the connector is fully inserted, you still will be able to see the metal part of the connector as shown in the illustration.
- When connecting the USB cable to a USB port, make sure you align the connector correctly with the port.
- Your computer may not be able to recognize the camera if you connect via a USB hub. Always connect directly to the computer’s USB port.



5. **Turn on the camera.**

   The camera's back lamp will light green at this time. In this mode, your Macintosh recognizes the memory card loaded in the camera (or the camera's built-in memory if it does not have a memory card loaded) as a drive. The appearance of the drive icon depends on the Mac OS version you are using.

   - The first time you connect the camera to your Macintosh with the USB cable, an error message may appear on your computer. If this happens, disconnect and then reconnect the USB cable.
   - Charging continues even if the camera is turned on (page 16).

6. **Double-click the camera's drive icon.**

7. **Drag the "DCIM" folder to the folder to which you want to copy it.**

8. **After the copy operation is complete, drag the drive icon to Trash.**

9. **On the camera, press [ON/OFF] (Power) to turn off the camera. After making sure that the green back lamp is unlit, disconnect the camera from the computer.**

- **To view copied images**

1. **Double-click the camera's drive icon.**

2. **Double-click the "DCIM" folder to open it.**

3. **Double-click the folder that contains the images you want to view.**

4. **Double-click the image file you want to view.**

   An image that was rotated on the camera will be displayed on your Macintosh screen in its original (unrotated) orientation.

Never use your computer to modify, delete, move, or rename any image files that are in the camera's built-in memory or on its memory card.
Doing so can cause problems with the camera's image management data, which will make it impossible to play back images on the camera and can drastically alter remaining memory capacity. Whenever you want to modify, delete, move, or rename an image, do so only on images that are stored on your computer.

IMPORTANT!

- Never unplug the USB cable, or operate the camera while viewing or storing images. Doing so can cause data to become corrupted.

Transferring Images Automatically and Managing Them on Your Macintosh

If you are running Mac OS X, you can manage snapshots using iPhoto, which comes bundled with some Macintosh products.

Playing a Movie

You can use QuickTime, which comes bundled with your operating system, to play back movies on a Macintosh. To play back a movie, first copy it to your Macintosh and then double-click the movie file.

• Minimum Computer System Requirements for Movie Playback

The minimum system requirements described below are necessary to play back movies recorded with this camera on a computer.

Operating System : Mac OS X 10.3.9 or higher
Required Software: QuickTime 7 or higher

- The above are recommended system environments. Configuring one of these environments does not guarantee proper operation.
- Certain settings and other installed software may interfere with proper playback of movies.

• Movie Playback Precautions

Proper movie playback may not be possible on some Macintosh models. If you experience problems, try the following.

- – Change the movie image quality setting to “640”.
- – Upgrade to the latest version of QuickTime.
- – Shut down other applications that are running.

Even if proper playback is not possible on your Macintosh, you can use the AV cable that comes bundled with the camera to connect to the video input terminal of a TV or Macintosh and play back movies that way.

IMPORTANT!

- Be sure to move the movie data to the hard disk of your Macintosh before trying to play it. Proper movie playback may not be possible for data accessed over a network, from a memory card, etc.

Files and Folders

The camera creates a file and saves it each time you shoot a snapshot, record a movie, or perform any other operation that stores data. Files are grouped by storing them in folders. Each file and folder has its own unique name.

	Name and Maximum Number Allowed	Example
File		
	Each folder can contain up to 9999 files named DSCI0001 through DSCI9999. The extension on the file name depends on the file type.	26th file name: DSCI0026.JPG Extension Serial number (4 digits)

- You can view folder and file names on your computer. For details about how file names are displayed on the camera’s monitor screen, see page 8.
- The total number of folders and files allowed depends on the image size and quality, and capacity of the memory card being used for storage.

• Built-in Memory and Memory Card Data Handling Precautions

- Whenever copying memory contents to your computer, you should copy the DCIM folder and all of its contents. A good way to keep track of multiple DCIM copies of the DCIM folders it to change its name to a date or something similar after you copy it to your computer. If you later decided to return the folder to the camera, however, be sure to change its name back to DCIM. The camera is designed to recognize only a root file with the name DCIM. Note the camera also will not be able to recognize the folders inside the DCIM folder unless they have the names they originally had when you copied them from the camera to your computer.
- You also can use a PC card adapter or a memory card reader/writer to access camera files directly from the camera’s memory card.

Other Settings (Set Up)

This section explains menu items that you can use to configure settings and perform other operations in both the REC mode and PLAY mode.

See the following for more information.
- REC Menu (page 49)
- PLAY Menu (page 65)

Configuring Camera Sound Settings (Sounds)

Procedure

[SET] → MENU → Set Up Tab → Sounds

Startup	Sound 1 / Sound 2 / Sound 3 / Off
Half Shutter	On / Off
Shutter	
Beep	
🔊 **Beep**	Specifies the sound volume. This setting is also used as the audio level during video output (page 63).
🔊 **Playback**	Specifies the volume of movie and Audio Snapshot audio output. This volume setting is not used during video output (from the USB/AV port).

- Setting a volume level of 0 mutes output.

Configuring a Startup Image

Procedure

[SET] → MENU → Set Up Tab → Startup Image

Display the image you want to use as your startup image and then select “On”.

- The startup image does not appear when you turn on the camera by pressing [▶] (PLAY).
- You can specify a snapshot you recorded as the startup image, or you can use the special startup image provided in the camera’s built-in memory.
- If you select an audio snapshot as the startup image, the audio will not play at startup.
- Formatting built-in memory (page 94) will delete the current startup image setting.

Specifying the File Name Serial Number Generation Rule (File Numbering)

Procedure

[SET] → MENU → Set Up Tab → File Numbering

Use the following procedure to specify the rule that governs generation of the serial number used in file names (page 85).

Continue	Tells the camera to remember the last used file number. A new file will be named using the next sequential number, even if files are deleted or if a blank memory card is loaded. If a memory card is loaded and that card already has files stored on it and the largest sequential number in the existing file names is greater than the largest sequential number remembered by the camera, numbering of new files will start from the largest sequential number in the existing file names plus 1.
Reset	Restarts the serial number from 0001 whenever all files are deleted or when the memory card is replaced with a blank one. If a memory card is loaded and that card already has files stored on it, numbering of new files will start from the largest sequential number in the existing file names number plus 1.

Configuring World Time Settings (World Time)

Procedure

[SET] → MENU → Set Up Tab → World Time

You can use the World Time screen to view the current time in a zone that is different from your Home City when you go on a trip, etc. World Time displays the current time in 162 cities in 32 time zones around the globe.

1. **Use [▲] and [▼] to select "Destination" and then press [▶].**
   - To change the geographic area and city for the time where you normally use the camera, select "Home".

2. **Use [▲] and [▼] to select "City" and then press [▶].**
   - To change the "Destination" setting to summer time, use [▲] and [▼] to select "DST" and then select "On". Summer time is used in some geographical areas to advance the current time setting by one hour during the summer months.

3. **Use [▲], [▼], [◀], and [▶] to select the geographic area you want and then press [SET].**

4. **Use [▲] and [▼] to select the city you want and then press [SET].**

5. **Press [SET].**

IMPORTANT!

- Before configuring World Time settings, make sure that the Home City setting is the place where you live or normally use the camera. If it isn't, select "Home" on the screen in step 1 and configure the Home City, date, and time settings as required (page 89).

Time Stamping Snapshots (Date Stamp)

Procedure

[SET] → MENU → Set Up Tab → Date Stamp

You can configure the camera to stamp the recording date only, or date and time in the lower right corner of each snapshot.

- Once date and time information is stamped into a snapshot, it cannot be edited or deleted.

Example: July, 10, 2012, 1:25 p.m.

Date	2012/7/10
Date&Time	2012/7/10 1:25pm
Off	No stamping of date and/or time

- Even if you do not stamp the date and/or time with Date Stamp, you can do so later using the DPOF function or some printing application (page 77).
- Digital zoom is disabled while time stamping is turned on.
- Time stamping is disabled when certain Scene Mode scenes are being used.

Setting the Camera’s Clock (Adjust)

Procedure

[SET] → MENU → Set Up Tab → Adjust

[▲] [▼]	Change the setting at the cursor location
[◀] [▶]	Move the cursor between settings
[●] (Movie)	Toggles between 12-hour and 24-hour format

When the date and time settings are what you want, press [SET] to apply them.

- You can specify a date from 2001 to 2049.
- Be sure to select your Home City (page 88) before setting the time and date. If you set the time and date while the wrong city is selected for your Home City, the times and dates of all of the World Time cities (page 88) will be wrong.

Specifying the Date Format

Procedure

[SET] → MENU → Set Up Tab → Date Format

You can select from among three different styles for the date.

Example: July, 10, 2012

YY/MM/DD	12/7/10
DD/MM/YY	10/7/12
MM/DD/YY	7/10/12

Specifying the Display Language (Language)

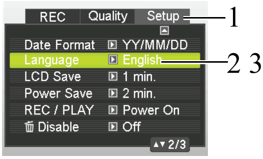
Procedure

[SET] → MENU → Set Up Tab → Language

- **Specify the display language you want.**

1 Select the tab on the right.
2 Select “Language”.
3 Select the language you want.

- Camera models sold in certain geographic areas may not support display language selection.



Date Format YY/MM/DD
Language English
LCD Save 1 min.
Power Save 2 min.
REC / PLAY Power On
Disable Off

Configuring Sleep State Settings (LCD Save)

Procedure

[SET] → MENU → Set Up Tab → LCD Save

This feature turns off the monitor screen whenever no camera operation is performed for a preset amount of time. Press any button to turn the monitor screen back on.

Trigger Time Settings: 30 sec, 1 min, 2 min, Off (LCD Save is disabled while “Off” is selected.)

- LCD Save is disabled under any of the following conditions.
  - In the PLAY mode
  - While the camera is connected to a computer or other device
  - During a slideshow
  - During “[⬉] Tracking”
  - During Voice REC playback or recording
  - During movie recording and playback
- When both LCD Save and Power Saving are turned on, Power Saving takes priority.

Configuring Auto Power Settings (Power Saving)

Procedure

[SET] → MENU → Set Up Tab → Power Saving

Power Saving turns off the camera whenever no camera operation is performed for a preset amount of time.

Trigger Time Settings: 1 min, 2 min, 5 min (The trigger time is always 5 minutes in the PLAY mode.)

- Power Saving is disabled under any of the following conditions.
  - While the camera is connected to a computer or other device
  - During a slideshow
  - During “[⬉] Tracking”
  - During Voice REC playback or recording
  - During movie recording and playback

Configuring [📷] and [▶] Settings (REC/PLAY)

Procedure

[SET] → MENU → Set Up Tab → REC/PLAY

Power On	Camera turns on whenever [📷] (REC) or [▶] (PLAY) is pressed.
Power On/Off	Camera turns on or off whenever [📷] (REC) or [▶] (PLAY) is pressed.
Disable	Camera does not turn on or off whenever [📷] (REC) or [▶] (PLAY) is pressed.

- With “Power On/Off”, the camera turns off when you press [📷] (REC) in the REC mode or [▶] (PLAY) in the PLAY mode.
- Change this setting to anything besides “Disable” before connecting to a TV for image viewing.

Disabling File Deletion (🗑 Disable)

Procedure

[SET] → MENU → Set Up Tab → 🗑 Disable

The camera will not start the image delete operation when you press [🗑] (Delete) while “🗑 Disable” is turned on.

You can protect against accidental deletion of images by selecting “On” for “🗑 Disable”.

- Performing a format operation (page 94) will cause all images to be deleted, even if file deletion is disabled (“On” selected for “🗑 Disable”) for some images.

Configuring USB Protocol Settings (USB)

Procedure

[SET] → MENU → Set Up Tab → USB

You can use the procedure below to select the USB communication protocol, which is used when exchanging data with a computer, printer, or other external device.

Mass Storage	Select this setting when connecting to a computer (pages 79, 82). With this setting, the computer sees the camera as an external storage device. Use this setting for normal transfer of images from the camera to a computer.
PTP (PictBridge)	Select this setting when connecting to a printer that supports PictBridge (page 74). This setting simplifies the transfer of image data to the connected device.

Selecting the Screen Aspect Ratio and Video Output System (TV Out)

Procedure

[SET] → MENU → Set Up Tab → TV Out

You can use the procedure in this section to select either NTSC or PAL as the video output system. You can also specify an aspect ratio of 4:3 or 16:9.

NTSC	Video system used in Japan, the U.S., and other countries
PAL	Video system used in Europe and other areas

4:3	Normal TV screen aspect ratio
16:9	Wide screen aspect ratio

- Select the aspect ratio (4:3 or 16:9) that matches the type of TV you plan to use. Images will not display correctly if you select the wrong aspect ratio.
- Images will not display correctly unless the camera’s video signal output setting matches the video signal system of the TV or other video equipment.
- Images cannot be displayed correctly on a TV or video equipment that is not NTSC or PAL.

Formatting Built-in Memory or a Memory Card (Format)

Procedure

[SET] → MENU → Set Up Tab → Format

If a memory card is loaded in the camera, this operation will format the memory card. It will format built-in memory if no memory card is loaded.

- The format operation will delete all contents on the memory card or in built-in memory. It cannot be undone. Make sure you do not need any data currently on the card or in built-in memory before you format it.
- Formatting built-in memory will delete the following data.
  - Protected images
  - Startup screen
- Formatting a memory card will delete the following data.
  - Protected images
- Formatting will cause all images to be deleted, even if file deletion is disabled (“On” selected for “🗑 Disable” (page 92)) for some images.
- Make sure the camera’s battery is sufficiently charged before starting a formatting operation. Formatting may not be performed correctly and the camera may stop operating normally if the camera powers down while formatting is in progress.
- Never open the battery cover while formatting is in progress. Doing so can cause the camera to stop operating normally.

Resetting the Camera to Factory Defaults (Reset)

Procedure

[SET] → MENU → Set Up Tab → Reset

See page 105 for details about the camera’s factory default settings.
The settings below are not reset.
World Time settings, clock settings, date format, screen language, video output

Appendix

Precautions during Use

• Avoid Use While In Motion

- Never use the camera to record or play back images while operating an automobile or other vehicle, or while walking. Looking at the monitor while in motion creates the risk of serious accident.

• Directly Viewing the Sun or Bright Light

- Never look at the sun or any other bright light through the cameras viewfinder. Doing so can damage your eyesight.

• Flash

- Never use the flash unit in areas where flammable or explosive gas may be present. Such conditions create the risk of fire and explosion.
- Never fire the flash in the direction of a person operating a motor vehicle. Doing so can interfere with the driver’s vision and creates the risk of accident.
- Never fire the flash too close to the eyes of the subject. Doing so creates the risk of loss of eyesight.

• Monitor Screen

- Should the monitor screen ever become cracked, never touch any of the liquid inside the monitor screen. Doing so creates the risk of skin inflammation.
- Should monitor screen liquid ever get into your mouth, immediately rinse your mouth out and contact your physician.
- Should monitor screen liquid ever get into your eyes or onto your skin, immediately rinse with clean water for at least 15 minutes and contact your physician.

• Connections

- Never plug any devices that are not specified for use with this camera into connectors. Connecting a non-specified device creates the risk of fire and electric shock.

• Transport

- Never operate the camera inside of an aircraft or anywhere else where operation of such devices is restricted. Improper use creates the risk of serious accident.

• Smoke, abnormal odor, overheating, and other abnormalities

- Continued use of the camera while it is emitting smoke or strange odor, or while it is overheating creates the risk of fire and electric shock. Immediately perform the following steps whenever any of the above symptoms are present.
    1. Turn off the camera.
    2. Remove the battery from the camera, taking care to protect yourself against burn injury.

• Water and Foreign Matter

- Water, other liquids, or foreign matter (especially metal) getting inside the camera creates the risk of fire and electric shock. Immediately perform the following steps whenever any of the above symptoms are present. Particular care is required when using the camera where it is raining or snowing, near the ocean or other body of water, or in a bathroom.
  1. Turn off the camera.
  2. Remove the battery from the camera.

• Dropping and Rough Treatment

- Continued use of the camera after it is damaged by dropping or other rough treatment creates the risk of fire and electric shock. Immediately perform the following steps whenever any of the above symptoms are present.
  1. Turn off the camera.
  2. Remove the battery from the camera.

• Keep Away From Fire

- Never expose the camera to fire, which can cause it to explode and creates the risk of fire and electric shock.

• Disassembly and Modification

- Never try to take the camera apart or modify it in any way. Doing so creates the risk of electric shock, burn injury, and other personal injury.

• Locations To Be Avoided

- Never leave the camera in any of the following types of locations. Doing so creates the risk of fire and electric shock.
  - Areas subject to large amounts of humidity or dust
  - Food preparation areas or other locations where oil smoke is present
  - Near heaters, on a heated carpet, in areas exposed to direct sunlight, in a closed vehicle parked in the sun, or other areas subject to very high temperatures
- Never place the camera on an unstable surface, on a high shelf, etc. Doing so can cause the camera to fall, creating the risk of personal injury.

• Backing Up Important Data

- Always keep backup copies of important data in camera memory by transferring it to a computer or other storage device. Note that data can be deleted in the case of camera malfunction, repair, etc.

• Memory Protection

- Whenever replacing the battery, be sure to follow the correct procedure as described in the documentation that comes with the camera. Incorrectly replacing the battery can result in corruption or loss of data in camera memory.

- **Rechargeable Battery**

- Do not charge the battery by any unauthorized means. Attempting to charge the battery by an unauthorized means creates the risk of battery overheating, fire, and explosion.
- Do not expose or immerse the battery in fresh water or salt water. Doing so can damage the battery, and cause deterioration of its performance and loss of service life.
- Use only the provided batteries or type of battery and charger that came with your camera. Using other types of battery or charger may damage the equipment and invalidate the warranty.
- Failure to observe any of the following precautions creates the risk of battery overheating, fire, and explosion.
  - Never use or leave the battery near open flame.
  - Do not expose the battery to heat or fire.
  - Never carry or store the battery together with items that can conduct electricity (necklaces, pencil lead, etc.).
  - Never disassemble the battery, pierce it with a needle, or expose it to strong impact (hit it with a hammer, step on it, etc.), and never apply solder to it. Never place the battery into a microwave oven, heater, high-pressure generating device, etc.
- Should you ever notice leakage, strange odor, heat generation, discoloration, deformation, or any other abnormal condition while using, charging, or storing a battery, immediately remove it from the camera and keep it away from open flame.
- Do not use or leave the battery under direct sunlight, in an automobile parked in the sun, or in any other area subject to high temperatures. Doing so can damage the battery, and cause deterioration of its performance and loss of service life.
- Continued charging creates the risk of battery overheating, fire, and explosion.
- Battery fluid can damage your eyes. Should battery fluid get into your eyes accidentally, immediately rinse them with clean tap water and then consult a physician.
- Be sure to read the user documentation that comes with the camera and special USB adapter before using or charging the battery.
- If a battery is to be used by young children, make sure that a responsible adult makes them aware of the precautions and proper handling instructions, and make sure that they handle the battery correctly.
- Should fluid from a battery accidentally get onto clothing or your skin, immediately rinse it off with clean tap water. Prolonged contact with battery fluid can cause skin irritation.

• Battery Life

- Battery continuous operation times provided in this manual represent the approximate amount of time before the camera turns off due to low battery power when being powered by the special battery under normal temperature (25°C (77°F)). They do not guarantee that you will be able to achieve the indicated level of operation. Actual battery life is greatly affected by ambient temperature, battery storage conditions, the amount of time spent in storage, etc.
- Leaving the camera on can run down the battery and cause the low battery warning to appear. Turn off the camera whenever you are not using it.
- The low battery warning indicates that the camera is about to turn off due to low battery power. Charge the battery as soon as possible. Leaving a low or dead battery in the camera can lead to battery leakage and data corruption.

• Data Error Precautions

Your digital camera is manufactured using precision digital components. Any of the following creates the risk of corruption of data in camera memory.

- Removing the battery or memory card while the camera is performing some operation
- Removing the battery or memory card while the back lamp is flashing green after turning off the camera
- Disconnecting the USB cable while communication is in progress
- Using a battery that is low
- Other abnormal operations

Any of the above conditions can cause an error message to appear on the monitor screen (page 112). Perform the action indicated by the message that appears.

• Operating Environment

- Operating Temperature Requirements: 0 to 40°C (32 to 104°F)
- Operating Humidity: 0 to 90% (non condensation)
- Do not place the camera in any of the following locations.
  - In an area exposed to direct sunlight, or large amounts of moisture, dust, or sand
  - Near an air conditioner or in other areas subjected to extreme temperature or humidity
  - Inside of a motor vehicle on a hot day, or in an area subjected to strong vibration

• Condensation

Sudden and extreme temperature changes, such as when the camera is moved from the outdoors on a cold winter day into a warm room, can cause water droplets called “condensation” to form on the interior and the exterior of the camera, which creates the risk of malfunction. To prevent condensation from forming seal the camera in a plastic bag before changing locations. Then leave the bag sealed to allow the air inside to naturally change to the same temperature as the air in the new location. After that, remove the camera from the bag and open the battery cover for a few hours.

• Lens

- Never apply too much force when cleaning the surface of the lens. Doing so can scratch the lens surface and cause malfunction.
- You may sometimes notice some distortion in certain types of images, such as a slight bend in lines that should be straight. This is due to the characteristics of lenses, and does not indicate malfunction of the camera.

• Caring for your camera

- Never touch the lens or flash window with your fingers. Finger smudges, dirt, and other foreign matter on the lens or flash window can interfere with proper operation of the camera. Use a blower or other means to keep the lens and flash window free of dirt and dust, and wipe gently with a soft, dry cloth.
- To clean the camera, wipe it with a soft, dry cloth.

• Old Rechargeable Battery Handling Precautions

- Insulate the positive and negative terminals with tape, etc.
- Do not peel the covering off of the battery.
- Do not try to take the battery apart.

• USB adapter Handling Precautions

⊘

- Never plug the power cord into an outlet whose voltage rating is different from that marked on the power cord. Doing so creates the risk of fire, malfunction, and electric shock.
- Take care to protect the power cord against damage and breaking. Never place heavy objects onto the power cord, or expose it to intense heat. Doing so can damage the power cord, creating the risk of fire and electric shock.
- Never try to modify the power cord, or subject it to severe bending, twisting, or pulling. Doing so creates the risk of fire, malfunction, and electric shock.
- Never plug in or unplug the power cord while your hands are wet. Doing so creates the risk of electric shock.
- Do not plug the power cord into an outlet or extension cord that is shared by other devices. Doing so creates the risk of fire, malfunction, and electric shock.

- The USB adapter becomes slightly warm during charging. This is normal and does not indicate malfunction.
- Unplug the power cord from the power outlet when you are not using the USB adapter.
- Never use detergent to clean the power cord (especially the plug).
- Never cover the USB adapter with a blanket, etc. Doing so creates the risk of fire.

• Other Precautions

The camera becomes slightly warm during use. This is normal and does not indicate malfunction.

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Federal Communications Commission (FCC) Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning: A shielded-type power cord is required in order to meet FCC emission limits and to prevent interference to radio and television reception. Use only shielded cable to connect I/O devices to this equipment. Any changes or modifications not expressly approved by the manufacturer may void your warranty and service agreement.

Declaration of Conformity

This device complies with Part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

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Any and all unauthorized commercial copying, distribution, and copying of the bundled software over a network are prohibited.

Power Supply

Charging

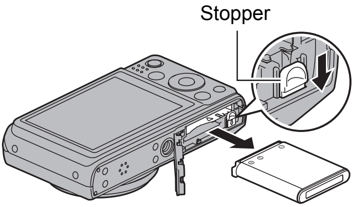
- **If the camera's back lamp starts flashing red...**

- Ambient temperature or the temperature of the battery may be either too high or too low. Disconnect the USB cable and wait until temperature is within the allowable charging range before trying again.
- Battery contacts may be dirty. Wipe them with a dry cloth.
- Try connecting to a different computer USB port. Depending on the setup of your computer, you may not be able to charge the camera's battery over a USB connection.

To replace the battery

1. Open the battery cover and remove the current battery.

With the monitor screen side of the camera facing upwards, slide the stopper in the direction indicated by the arrow in the illustration. After the battery pops out, pull it the rest of the way out of the camera.



2. Load a new battery.

Battery Precautions

Precautions during Use

- Operation provided by a battery under cold conditions is always less than operation under normal temperatures. This is due to the characteristics of the battery, not the camera.
- Charge the battery in an area where the temperature is within the range of 5°C to 35°C (41°F to 95°F). Outside this temperature range charging can take longer than normal or even fail.
- Do not tear or remove the battery outer label.
- If a battery provides only very limited operation following a full charge, it probably means the battery has reached the end of its service life. Replace the battery with a new one.

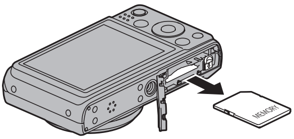
Storage Precautions

- Storing the battery for a long time while it is charged can cause deterioration of battery characteristics. If you do not plan to use a battery for some time, fully use up its charge before storing it.
- Always remove the battery from the camera when you are not using it. A battery left in the camera can discharge and go dead, which will require some time to charge when you need to use the camera.
- Store batteries in a cool, dry place (20°C (68°F) or lower).
- To prevent over discharging of an unused battery, fully charge it, and then load it in the camera and fully use up the charge about once every six months.

Using a Memory Card

See page 19 for information about supported memory cards and how to load a memory card.

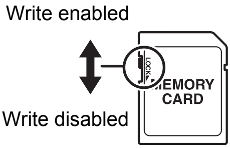
To replace the memory card



Press the memory card and then release it. This will cause it to pop out of the memory card slot slightly. Pull the card out the rest of the way and then insert another one.

- Never remove a card from the camera while the back lamp is flashing green. Doing so can cause the image save operation to fail and even damage the memory card.

• Using a Memory Card



- SD memory cards, SDHC memory cards, and SDXC memory cards have a write protect switch. Use the switch when you need to guard against accidentally deleting data. Note, however, if you write protect an SD memory card you must then turn write protection off whenever you want to record to it, format it, or delete any of its images.
- If a memory card starts to behave abnormally during image playback, you can restore normal operation by reformatting it (page 94). However, it is recommended that you always take along multiple memory cards whenever using the camera far away from the home or office.
- As you record data to and delete data from a memory card a number of times, it loses its ability to retain data. Because of this, periodic re-formatting of a memory card is recommended.
- Electrostatic charge, electrical noise, and other phenomena can cause data to become corrupted or even lost. Make sure that you always back up important data on other media (CD-R, CD-RW, hard disk, etc.).

• Memory Card Handling Precautions

Certain types of memory cards can slow down processing speeds. In particular, you may experience problems saving high-quality (1280) movies. When using the camera's built-in memory or certain types of memory cards, it can take too much time to record data, which can result in breaks in the image and/or audio. This condition is indicated by 🎥 and ●REC flashing on the monitor screen. Use of a memory card with a maximum transfer speed of at least 10MB per second is recommended.

- **Discarding or Transferring Ownership of a Memory Card or the Camera**

The format and delete functions of the camera do not actually delete files from the memory card. The original data remains on the card. Note that responsibility for the data on a memory card lies with you. The following procedures are recommended whenever you discard a memory card or the camera, or if you transfer ownership to another party.

- When discarding a memory card, either physically destroy the memory card or use commercially available data delete software to completely delete the data on the memory card.
- When transferring ownership of a memory card to another party, use commercially available data deletion software to completely delete the data on it.
- Use the format function (page 94) to completely delete the data in built-in memory before discarding or transferring ownership of the camera.

Reset Initial Default Settings

The tables in this section show the initial default settings on menus that appear in the REC mode and PLAY mode when you reset the camera (page 94).

- A dash (–) indicates an item whose setting is not reset or an item for which there is no reset setting.

IMPORTANT!

- Some menu items are not available while the camera is in the Silent mode (page 38).

• REC Mode

“REC” Tab

Focus	Auto Focus
Focus Frame	⛶
Burst	Off
Stabilizer	On
AF Area	[▪] Spot
L/R Key	Off
Grid	Off
Icon Help	On

Memory	SCN Scene Mode: Off / Flash: On / Focus: Off / White Balance: Off / ISO: Off / AF Area: On / Burst: Off / Self-timer: Off / MF Position: Off / Zoom Position: Off

“Quality” Tab

▢ Quality (Snapshots)	Normal
EV Compensation	0.0
White Balance	Auto

ISO	Auto
D-Lighting	Off
Color Mode	Off

“Set Up” Tab

Sounds	Startup: Sound 1 / Sound 2 / Sound 3 / Off Half Shutter: On / Off Shutter: On / Off Beep: On / Off 🔊 Beep: 0~7 🔊 Playback: 0~7
Startup Image	Off
File Numbering	Continue
World Time	Home
Date Stamp	Off
Adjust	–

Date Format	–
Language	–
LCD Save	1 min
Power Saving	2 min
REC/PLAY	Disable
🗑 **Disable**	Off
USB	Mass Storage
TV Out	–
Format	–
Reset	–

- ## PLAY Mode

“PLAY” Tab

Rotate	–
DPOF	–
Protect	–
Resize	–

Trimming	–
Voice Memo	–
Copy	–

“Set Up” Tab

- The contents of the “Set Up” tab are the same in the REC mode and PLAY mode.

When things don’t go right...

Troubleshooting

Problem	Possible Cause and Recommended Action
Power Supply	
Power does not turn on.	1)The battery may not be loaded correctly (page 12). 2)The battery may be dead. Charge the battery (page 12). If the battery goes dead soon after being charged, it means the battery has reached the end of its life and needs to be replaced. Purchase a separately available rechargeable lithium ion battery.
The camera suddenly powers down.	1)Power Saving may have activated (page 91). Turn power back on. 2)The battery may be dead. Charge the battery (page 12). 3)The camera’s protection function may have activated because camera temperature is too high. Turn off the camera and wait until it cools down before trying to use it again.
Power will not turn off. Nothing happens when a button is pressed.	Remove the battery from the camera and then reload it.
Image Recording	
Image is not recorded when the shutter button is pressed.	1)If the camera is in the PLAY mode, press [📷] (REC) to enter the REC mode. 2)If the flash is charging, wait until the charge operation finishes. 3)If the message “Memory Full” appears, transfer images to your computer, delete images you no longer need, or use a different memory card.
Auto Focus does not focus properly.	1)If the lens is dirty, clean it off. 2)The subject may not be in the center of the focus frame when you compose the image. 3)The subject you are shooting may not be a type that is compatible with Auto Focus (page 29). Use manual focus (page 51). 4)You may be moving the camera when shooting. Try shooting with Stabilizer or use a tripod. 5)You may be pressing the shutter button all the way without waiting for Auto Focus. Half-press the shutter button and allow enough time for Auto Focus to focus.

Problem	Possible Cause and Recommended Action
The subject is out of focus in the recorded image.	The image may not be focused properly. When composing the image, make sure the subject is located inside the focus frame.
The flash does not fire.	1)If ⊘ (Forced Off) is selected as the flash mode, change to another mode (page 34). 2)If the battery is dead, charge it (page 12). 3)If a Scene Mode scene that uses ⊘ (Forced Off) is selected, change to a different flash mode (page 34) or select a different Scene Mode scene (page 47).
The red ⊘ (Forced Off) icon is displayed on the monitor screen and the flash does not fire.	The flash unit may be malfunctioning. Contact your original retailer. Note that though the flash will not fire, you still can use the camera for non-flash shots.
Camera powers down during Self-timer countdown.	The battery may be dead. Charge the battery (page 12).
The monitor screen image is out of focus.	1)You may be using Manual Focus and have not focused the image. Focus the image (page 52). 2)You may be using 🌷 (Macro) for scenery or portraits. Use Auto Focus for scenery and portrait shots (page 51). 3)You may be trying to use Auto Focus or ∞ (Infinity) when shooting a close-up shot. Use the 🌷 (Macro) for close ups (page 51).
There is a vertical line in the monitor screen image.	Shooting a very brightly lit subject can cause a vertical band to appear in the monitor screen image. This is a CCD phenomenon known as “vertical smear”, and does not indicate malfunction of the camera. Note that vertical smear is not recorded with the image in the case of a snapshot, but it is recorded in the case of a movie.
There is digital noise in images.	1)Sensitivity may have been increased automatically for a dark subject, which increases the chance of digital noise. Use a light or some other means to illuminate the subject. 2)You may be attempting to shoot in a dark location with ⊘ (Forced Off) selected, which can increase digital noise and make images appear coarse. In this case, turn on flash (page 34) or use lights for illumination. 3)Shooting with a high ISO sensitivity setting or with the Lighting feature can cause an increase in digital noise. Use a light or some other means to illuminate the subject.

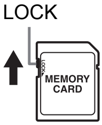
Problem	Possible Cause and Recommended Action
A recorded image was not saved.	1)Camera power may have been turned off before the save operation was complete, which will result in the image not being saved. If the battery indicator shows 🔋, charge the battery as soon as possible (page 17). 2)You may have removed the memory card from the camera before the save operation was complete, which will result in the image not being saved. Do not remove the memory card before the save operation is complete.
Though available lighting is bright, the faces of people in the image are dark.	Not enough light is reaching the subjects. Change the flash mode setting to ⚡ (Forced On) for daylight synchro flash (page 34), or adjust EV Compensation to the + side (page 58).
Night shots come out bad.	Use the following Scene Mode scenes (page 47) when shooting at night. • Night Scene (for shooting night scenery only) • Night Scene Portrait (for shooting people against night scenery)
Subjects are too dark when shooting images in a seashore or ski area.	Sunlight reflected by water, sand, or snow, can cause underexposure of images. Change the flash mode setting to ⚡ (Forced On) for daylight synchro flash (page 34), or adjust EV Compensation to the + side (page 58).
Digital zoom (including HD zoom) does not work. The zoom bar indicates zoom only up to a zoom factor of 12.5.	Time stamping may be turned on, which will cause digital zoom to be disabled. Turn off time stamping (page 89).
The image is out of focus during movie recording.	1)Focusing may not be possible because the subject is outside the focus range. Shoot within the allowable range. 2)The lens may be dirty. Clean the lens (page 99).

Problem	Possible Cause and Recommended Action
Playback	
The color of the playback image is different from what appears on the monitor screen when shooting.	Sunlight or light from another source may be shining directly into the lens when you are shooting. Position the camera so sunlight does not shine directly into the lens.
Images are not displayed.	This camera cannot display non-DCF images recorded onto a memory card using another digital camera.
Images cannot be edited (with resizing, trimming, rotation).	Note that you cannot edit the following types of snapshots. • Movies • Snapshots recorded with another camera
File Deletion	
A file cannot be deleted.	1)The file may be protected. Unprotect the file (page 69). 2)“🗑 Disable” setting may be “On”. Change the setting to “Off” (page 92).
Other	
The wrong date and time are displayed, or the wrong date and time are being stored along with image data.	The date and time setting is off. Set the correct date and time (page 89).
The messages on the display are in the wrong language.	The wrong display language is selected. Change the display language setting (page 90).
Images cannot be transferred over a USB connection.	1)The USB cable may not be connected securely. Check all connections. 2)The wrong USB communication protocol is selected. Select the correct USB communication protocol in accordance with the type of device you are connecting (pages 79). 3)If the camera is not turned on, turn it on. 4)Your computer may not be able to recognize the camera if you connect via a USB hub. Always connect directly to the computer’s USB port.
Language selection screen appears when the camera is turned on.	1)You did not configure initial settings after purchasing the camera or the camera may have been left with a dead battery. Check the camera setup (pages 18, 90). 2)There may be a problem with the camera’s memory data. If this is the case, perform the reset operation to initialize the camera’s setup (page 94). After that, configure each setting. If the language selection screen does not re-appear when you turn the camera on, it means that the camera’s memory management data has been restored.

Problem	Possible Cause and Recommended Action
The time and date settings configured the first time after purchasing the camera are reset to their factory defaults when remove the camera's battery.	Load the camera's battery and reconfigure the time and date settings (page 18). Do not remove the battery from the camera for at least 48 hours after configuring time and date settings. After that, the settings will not be reset if you remove the battery. • If the time and date are reset to their factory default settings when you remove the battery after it has been loaded for more than 48 hours, it could mean that the camera's setting memory is defective.
Buttons are not responsive right after the power has been turned on.	With large capacity memory cards there is a delay after the power has been turned on before the buttons become responsive.

Display Messages

ALERT	The camera's protection function may have activated because camera temperature is too high. Turn off the camera and wait until it cools down before trying to use it again.
Battery is low.	Battery power is low.
Card ERROR	There is something wrong with the memory card. Turn off the camera, remove the memory card and then reload it into the camera. If this message re-appears when you turn the camera back on, format the memory card (page 94). **IMPORTANT!** • Formatting a memory card deletes all its files. Before formatting, try transferring recoverable files to a computer or some other storage device.
Check connections!	You are attempting to connect the camera to a printer while the camera's USB settings are not compatible with the USB system of the printer (page 74).
Files could not be saved because battery is low.	Battery power is low, so an image file could not be saved.
Folder cannot be created.	You are trying to record a file while there are already 9999 files stored in the 999th folder. If you want to record more, delete files you no longer need (page 27).
LENS ERROR	This message appears and the camera turns off whenever lens performs some unexpected operation. If the same message appears after you turn power back on, contact your original retailer.
Load paper!	The printer ran out of paper while printing.
Memory Full	Memory is full with images you recorded and/or files saved by editing operations. Delete files you no longer need (page 27).
Printing Error	An error occurred while printing. • The printer is turned off. • The printer generated an error, etc.
Record Error	Image compression could not be performed for some reason during image data storage. Shoot the image again.
RETRY POWER ON	The lens came into contact with an obstruction while moving. The camera will turn off automatically when this message appears. Remove the obstruction and turn power back on again.

SYSTEM ERROR	Your camera system is corrupted. Contact your retailer.
The card is locked.	The LOCK switch of the SD, SDHC, or SDXC memory card loaded in the camera is in the locked position. You cannot store images to or delete images from a memory card that is locked. 
There are no files.	There are no files in built-in memory or on the memory card.
There are no printing images. Set up DPOF.	There are currently no files specified for printing. Configure the required DPOF settings (page 76).
This card is not formatted.	The memory card loaded in the camera is not formatted. Format the memory card (page 94).
This file cannot be played.	The file you are trying to access is corrupted or is a type that cannot be displayed by this camera.
This function cannot be used.	This message will appear part way through an operation when you attempt to use a function that is not allowed in combination with another function.

Specifications

File Format	Snapshots: JPEG (Exif Version 2.3); DCF 2.0 standard; DPOF compliant Movies: Motion JPEG AVI, IMA-ADPCM audio (monaural) Audio (Voice REC): WAV (monaural)
Recording Media	Built-in Memory (Image Storage Area: 13.6MB) SD/SDHC/SDXC
Recorded Image Sizes	Snapshot: 16M (4608x3456), 3:2 (4608x3072), 16:9 (4608x2592), 10M (3648x2736), 6M (2816x2112), 3M (2048x1536), VGA (640x480) Movies: 1280 (1280x720), 640 (640x480)
Image Deletion	1 file; selected files; all files (with memory protection feature)
Effective Pixels	16.15 Megapixels
Imaging Element	Size: 1/2.3-inch square pixel CCD Total Pixels: 16.44 Megapixels
Lens/Focal Distance	F3.0 (W) to 5.9 (T) f = 4.24 to 53.0 mm (equivalent to 24 to 300 mm in 35 mm format) Nine lenses in eight groups, including aspherical lens.
Zoom	12.5X optical zoom, 4X digital zoom (50.0X in combination with optical zoom) Up to 159.5X when HD Zoom and Digital zoom are used in combination (VGA size)
Focusing	Contrast Detection Auto Focus • Focus Modes: Auto Focus, Macro Focus, Super Macro Focus, Infinity, Manual Focus • AF Area: Spot, Multi, Tracking
Approximate Focus (Snapshot) (From Lens Surface)	Auto Focus: 5 cm to ∞ (2.0" to ∞) (Wide Angle) Macro Focus: 1 cm to 50 cm (0.39" to 19.7") (Fifth step zoom from the Widest Angle setting) Super Macro Focus: 1 cm to 30 cm (0.39" to 11.9") Infinity: ∞ Manual: 5 cm to ∞ (2.0" to ∞) (Wide Angle) * Range is affected by optical zoom.
Metering	Multi-pattern (center weighted for some SCN scenes) by imaging element
Exposure Control	Program AE
Exposure Compensation	–2.0 EV to +2.0 EV (in 1/3EV steps)
Shutter	CCD shutter, mechanical shutter

Shutter Speed	Snapshot (Auto): 1/2 to 1/2000 second Snapshot (Night Scene): 4 to 1/2000 second ＊ May differ due to the camera setup.
Aperture Value	F3.0 (W) to F7.9 (W) (When used with ND filter) ＊ Using optical zoom changes the aperture value.
White Balance	Auto, Daylight, Overcast, Shade, Fluorescent_1, Fluorescent_2, Tungsten, Manual WB
Sensitivity (Standard Output Sensitivity)	Snapshots: Auto, ISO 64, ISO 100, ISO 200, ISO 400, ISO 800, ISO 1600 equivalent Movies: Auto
Self-timer	Approximate Trigger Times: 10 seconds, 2 seconds, Self-timer: x3
Flash Modes	Auto, Off, On, Red-eye reduction
Recording	Snapshots; Macro; Self-timer; Burst; Scene Mode; Face Tracking; Stabilizer; D-Lighting; Simple Mode; Movies (1280) (with monaural audio); Audio (Voice REC); Silent Mode
Approximate Maximum Audio Recording Times	After Recording: 30 seconds per image Voice REC: 2 hours 20 minutes 37 seconds (when using built-in memory)
Monitor Screen	2.7-inch TFT color LCD 230,400 (960x240) dots
Viewfinder	Monitor Screen
Timekeeping Function	Date and Time: Recorded with image data Auto Calendar: To 2049
World Time	162 cities in 32 time zones City name, date, time, summer time
External connection terminal	USB port (Hi-Speed USB compatible, USB charging) / AV output terminal (NTSC/PAL)
Microphone	Monaural
Speaker	Monaural
Power Requirements	Rechargeable lithium ion battery x1
Dimensions	102.9 x 58.7 x 21.1 x 28.7mm
Weight	Approximately 182g (excluding battery and memory card)